

January 25, 2016

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATION
DEPARTMENT OF ADMINISTRATION

DIVISION OF PURCHASES BID NO. 7550162

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

RHODE ISLAND CONTRACT NO.2015-CB-045

FEDERAL-AID PROJECT NO. FAP Nos: BRO-0131-001

Harbor Junction Br. #131

Elmwood Avenue, I-95 Underpass to Rogers Williams Park Entrance

CITY/TOWN OF Providence

COUNTY OF PROVIDENCE

NOTICE TO PROSPECTIVE BIDDERS

ADDENDUM NO. 2 Prospective bidders and all concerned are hereby notified of the following changes in the Plans, Specifications, Proposal and Distribution of Quantities for this contract. These changes shall be incorporated in the Plans, Specifications, Proposal and Distribution of Quantities, and shall become an integral part of the Contract Documents.

A. Contract Dates

1. Completion Dates

An Interim Completion Date has been added and the Substantial Completion date has been changed.

B. Specification Change/Addition

1. JS-5

Delete page JS-5 in its entirety and replace with revised page JS-5(R-1) attached to this Addendum No. 2. Completion Dates have been revised.

2. JS-57 and JS-58

Delete page JS-57 and JS-58 in their entirety and replace with revised pages JS-57(R-1) and JS-58(R-1) attached to this Addendum No. 2. Requirement for installing approach gas line has been added and Basis of Payment clarification has been added.

3. JS-59 thru JS-62

Delete pages JS-59 thru JS-62 in their entirety and replace with revised page JS-59(R-1) thru JS-62(R-1) attached to this Addendum No. 2. National Grid Gas Specification revised, including, but not limited to, gas related quantities.

4. JS-63 thru JS-80

Delete pages JS-63 thru JS-80 in their entirety and replace with revised page JS-63(R-1) thru JS-80(R-1) attached to this Addendum No. 2. The total sheet No. on the header has been change from 22 to 24.

5. JS-80A and JS-80B

Add pages JS-80A and JS-80B attached to this Addendum No. 2. National Grid Gas Support details and requirements added.

6. JS-122

Delete page JS-122 in its entirety and replace with revised page JS-122(R-1) attached to this Addendum No. 2. The Price Adjustments have been revised.

C. Distribution of Quantities

1. Entire DOQ

Delete entire DOQ and replace with revised DOQ attached to this Addendum No. The following items have been revised: Item 401.2000, Class 12.5 HMA, Item 702.9910, Install 6" Polyethylene Gas Main and Fittings on Approaches, Item 932.0100, Cutting and matching Asphalt, and Item 935.0400, Removing Bituminous Pavement by Micromilling.

D. Drawings/Plans - Change/Addition

1. Sheet No. 5 - Job Specific Plan Symbols, Legend & Notes

Revise Sheet No. 5 as shown on Sketch No. 1(R-1) attached to this Addendum No. 2. Note 18 has been added, and CM bubble has been added.

2. Sheet No. 13 – Phase Construction Plan and Details

Revise Sheet No. 13 as shown on Sketch No. 2(R-1) attached to this Addendum No. 2. Suggested Stage Construction Notes have been revised.

3. Sheet No. 19 – Abutment Details-2

Revise Sheet No. 19 as shown on Sketch No. 3(R-1) & Sketch No. 4(R-1) attached to this Addendum No. 2. Gas details revised.

4. Sheet No. 36 – Highway General Plan

Revise Sheet No. 36 as shown on Sketch No. 5(R-1) attached to this Addendum No. 2. The southerly project limit has been extended.

5. Sheet No. 37 – Drainage and Utility Plan

Revise Sheet No. 37 as shown on Sketch No. 6(R-1) & Sketch No. 7(R-1) attached to this Addendum No. 2. The southerly project limit has been extended and the limits of gas line have been extended at each end of project. Also, the gas service to Roger Williams Park has been relocated. Also, Note 5 has been added.

6. Sheet No. 44 – Miscellaneous Highway Details 3

Revise Sheet No. 44 as shown on Sketch No. 8(R-1) & Sketch No. 9(R-1) attached to this Addendum No. 2. The Gas Line Schematic and Blow Off Detail has been revised.

7. Sheet Nos. 53 thru 55 – Highway Cross Sections

Revise Sheet Nos. 53 thru 55 as shown on Sketch Nos. 10(R-1), 11(R-1), and 12(R-1) attached to this Addendum No. 2. The Gas Line has been added.

E. Proposal Addition/Deletion

1. Page P-5

Delete Page P-5 in its entirety and replace it with revised Page P-5 attached to this Addendum No. 2. The quantity for Item 401.2000, Class 12.5 HMA, has been revised.

2. Page P-7

Delete Page P-7 in its entirety and replace it with revised Page P-7 attached to this Addendum No. 2. The quantity for Item 702.9910, Install 6" Polyethylene Gas Main and Fittings on Approaches, has been revised.

3. Page P-14

Delete Page P-14 in its entirety and replace it with revised Page P-14 attached to this Addendum No. 2. The quantities for Item 932.0100, Cutting and Matching Asphalt, and Item 935.0400, Removing Bituminous Pavement by Micromilling, have been revised.

F. Pre-Bid Sign-In Sheet

1. Sign-In Sheet

The sign in sheet for the Pre-Bid Conference has been attached to this Addendum No. 2 for informational purposes.



RI Department of Transportation
Chief Engineer

CODE 108.1000

PROSECUTION AND PROGRESS

In accordance with Section 108.08, Failure to Complete on Time, Para. a., Phased Completion, Interim Completion and Substantial Completion the following defines the Interim and Substantial Completion Dates and Associated Liquidated Damages:

Interim Completion Date 1: See Table Below

All Contract work with the exception of restoring the stamped concrete median, final paving, and striping, shall be completed as defined by Section 101.71.

Liquidated Damages: \$1750.00 per calendar day.

Substantial Completion: See Table Below

All Contract work shall be completed, as defined by Section 101.71.

Liquidated Damages: \$550.00 per calendar day.

NTP	Interim Completion Date #1	Substantial Completion
On or before April 27, 2016	27-OCT-17	18-MAY-18
On April 28, 2016 through June 1, 2016	Not Required	10-AUG-18

CODE 702.9910 INSTALL 6" POLYETHYLENE GAS MAIN AND FITTINGS ON APPROACHES

CODE 702.9912 INSTALL 6" STEEL GAS MAIN AND FITTINGS ON BRIDGE

DESCRIPTION. This work consists of installing polyethylene gas main on approaches and welded steel gas main on bridge as shown on the Plans, and in accordance with the attached National Grid Gas Company Supplemental Information, and these Special Provisions. The Contractor will be required to cooperate fully with the Gas Company, and shall give the Gas Company at least six (6) weeks advance notice as to when materials (being supplied by the Gas Company) will be needed and the actual installation work will be performed.

National Grid Gas Company Supplemental Information is immediately succeeding this document.

Existing Gas mains shall be removed by the Contractor under item 201.0414. Pipe will be tested for PCB contamination by National Grid Gas. If pipe is found to be contaminated then the Contractor shall cap the ends and dispose of pipe at 642 Allens Avenue, Providence, per National Grid direction. If pipe is not contaminated then Contractor shall legally dispose of pipe. All ends of pipe to remain shall be capped by Contractor. Capping ends of pipe shall conform to National Grid requirements at no extra cost.

Construction is restricted on or near this gas facility from November 1st to March 31st. Any work on or within a distance of 7 feet from the facility within this time frame will require written approval of National Grid. No extra payment or time extension will be granted for adherence to this requirement, regardless of whether approval from National Grid is granted or not.

Gas line on approaches shall be installed prior to Stage 1 Traffic Control utilizing one lane closures.

MATERIALS.

Material provided by contractor includes padding sand and backfill. All other materials, including pipe hangers and sleeves through backwalls, will be provided by National Grid.

All materials shall conform to the attached National Grid Gas Company Supplemental Information.

CONSTRUCTION.

Installation shall be by an approved subcontractor and shall conform to the attached National Grid Gas Company Supplemental Information.

Gas tie-ins will be by National Grid.

METHOD OF MEASUREMENT.

“Install 6" Polyethylene Gas Main and Fittings on Approaches” will be measured by the number of linear feet actually installed, measured along the centerline of the pipe.

“Install 6" Steel Gas Main and Fittings on Bridge” will be measured by the number of linear feet actually installed measured along the centerline of the pipe.

BASIS OF PAYMENT:

The accepted quantity of “Install 6" Polyethylene Gas Main and Fittings on Approaches” will be paid for at the contract unit price per linear foot as listed in the Proposal. The price so-stated shall constitute full and complete compensation for all loading and hauling materials supplied by the Gas Company, furnishing all materials not supplied by the Gas Company, and for all equipment, tools and labor, including excavation, backfill and padding sand, as detailed on the plans and described in these Special provisions, complete, in place, and accepted by the Gas Company and the Engineer.

The accepted quantity of “Install 6" Welded Steel Gas Main and Fittings on Bridge” will be paid for at the contract unit price per linear foot as listed in the Proposal. The price so-stated shall constitute full and complete compensation for loading and hauling materials supplied by the Gas Company, furnishing all materials not supplied by the Gas Company, and for all equipment, tools and labor, including, but not limited to, installing hangers on bridge, and casing pipes thru backwalls, as detailed on the plans and described in these Special provisions, complete, in place, and accepted by the Gas Company and the Engineer.

The above pay items shall include installation of all materials supplied by the gas company.

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NATIONAL GRID

DOT REPLACEMENT OF HARBOR JUNCTION BRIDGE NO. 131

MAIN INSTALLATION ACROSS BRIDGE

PROVIDENCE, RI

SECTION 100

JOB DESCRIPTION AND DESIGN SPECIFICS

January 16, 2016

101 JOB DESCRIPTION

101.1 Work within this project by the state appointed bridge contractor consists of:

101.11 Installation of (2) 10-inch steel sleeves through the bridge backwall sections, approximately 10'4" total (5'2" each end).

101.2 Work within this project by the state appointed National Grid approved gas contractor consists of:

101.21 Installation of approximately 75 feet of 6-inch steel pipe across the west half of the new bridge structure (as shown on the contract drawings) and within the steel sleeves installed by the bridge contractor including; pipe support / pipe rollers, link seals and casing insulators through each steel sleeve and 45 degree elbows to anchor the pipe in the ground and bring the pipe to an adequate depth to go under the telephone ductbank.

101.22 Installation of approx. 584 feet of 6-inch plastic pipe within the roadway and associated plastic fittings to bring the pipes in alignment with the existing gas mains.

101.23 Installation of approx. 70 feet of 6-inch plastic pipe as a stub to tie-over the 6" cast iron main feeding Roger Williams Park.

101.24 Fabrication of (2) tie-in sections; each consisting of: (1) 6"x 45 plastic elbow & (2) 3' pieces of 6" plastic pipe.

Main Installation – Harbor Junction Bridge, Providence

Section 100

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101.25 Pressure testing the main and the tie-in sections to 90 psig for a minimum of 1 hour in accordance with Section 106 and installation of cathodic protection consisting of (2) 2-wire test stations with (4) 17# anodes each as shown on the design.

101.26 Development of “as-built” drawings based upon the National Grid Location Plans.

101.3 All work included in this section shall be performed by the state appointed National Grid approved gas piping contractor.

101.4 Live gas tie-ins and cut-offs will be done exclusively by the National Grid.

101.5 National Grid reserves the right to make inspections of the work during the progress of installation and, where required, have all installation sequences performed in the presence of its inspector or authorized agent.

102 MATERIAL AVAILABILITY

102.1 All piping materials, including pipe, valves, fittings and appurtenances shall be provided by National Grid and shall not include padding sand and special backfill. Material shall be available at a designated National Grid location during normal working hours. Transportation to the job site, including loading and unloading, shall be performed by the contractor.

103 MATERIAL – SPECIFICATIONS – PIPE

103.1 Ten-Inch Steel Pipe: (Sleeves under Approach Slabs and through Backwalls)

103.11 Length Required: Approximately 10 feet 4 inches (Total) – 5 feet 2 inch each

103.12 Specifications: API-5L, Grade B, PSL-2, bevel ends, double random lengths.

103.13 Wall Thickness - STD wall (t): 0.365”

103.14 Pipe Coating: Pritec 10/40 or Galvanized

103.2 Six-Inch Steel Pipe: (Carrier across Bridge and through Backwall Sleeves)

103.21 Length Required: Approximately 75 feet

103.22 Specifications: API-5L, Grade B, PSL-1, bevel ends, double random lengths.

103.23 Wall Thickness – STD wall (t): 0.280”

103.24 Longitudinal Joint Factor (E): 1.0

103.25 Minimum Specific Yield Strength (S); 35,000 psi

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103.26 Design Hoop Stress @ psig =

$$\frac{(100)(P)(D)}{2(t)(E)(S)} = \frac{(100)(100)(6.625)}{(2)(0.280)(1.0)(35,000)} = 3.38\% \text{ of SMYS}$$

103.27 Pipe Coating: Pritec 15/50

103.3 **Six-Inch Plastic Pipe: (Street Main, Stub & (2) Tie-in Sections)**

103.31 Length Required: Approximately 666 feet

103.32 Specifications: Performance Pipe Yellowstripe 8300, PE 4710/PE100, Polyethylene Pipe, 40-foot lengths.

103.33 Wall Thickness (t): 0.602" (DR 11.0)

103.34 Long Term Hydrostatic Strength (S): 1600 psi @ 73.4 degrees F

103.35 Maximum Operating Pressure $\frac{(2 \times S \times t \times 0.32)}{(D - t)} = \frac{(2 \times 1600 \times 0.602 \times 0.32)}{(6.625 - 0.602)} = 102 \text{ psig}^*$

- These values are limited to a maximum of 100 psig by DOT Code of Federal Regulations, Part 192, Title 49, Subpart C, Section 192.123.

104 OTHER MATERIAL

104.1 **Weld Valves**

104.11 None

104.2 **Plastic Valves**

104.21 (3) 6"

104.3 **Weld Fittings:**

104.31 Transition Fitting: (2) 6"; (2) 2"

104.32 Elbow: (4) 6"x 45 degree

104.4 **Plastic Fittings**

104.41 Cap: (3) 6"

104.42 Tapping Tee: (2) 6"x 2"

104.44 Elbow: (6) 6"x 45 degree; (2) 2"x 90 degree

104.45 Transition Fitting: See Weld Fittings

104.46 Tee: (1) 6"

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104.5 Other:

- 105.51 (1) 6" Canusa Shrink Sleeves (above grade)
 (5) 6" LB&A Adjustable Roll Guides 3B (bluecoated w/ non-conductive rollers) ORDER with (4) extra nuts per unit and threaded rods cut to 18" long
 (10) 6" Glas Mesh FRP Type 180 Saddle (roller to pipe protection)
 (6) 6"x 10" PSI Ranger II Casing Spacers (24-midi w 1.5" runner height) (carrier pipe within sleeve alignment)
 (40) LS-475-S Link Seals (carrier pipe to sleeve end seal)
 (2) 10"x 6" PSI Casing End Seal Model C (carrier pipe to sleeve end seal)
 (5) Road Valve Box
 (2) 2" Steel Thread Plugs
 (2) 2"x 6" long TOE Nipple Schedule 80 (EH)
 (2) 2" Meter Cock
 (8) 17# Anodes
 50' of 12 Gauge Black Wire
 50' of 12 Gauge White Wire
 584' of No. 12 Tracing Wire
 584' of 6" Marking Tape

105 INSTALLATION OF MAIN

- 105.1 All plastic pipe installation work shall conform to the requirements of National Grid's Installation Specifications and Code Reconciliation: Section 200A, Installation of Polyethylene Gas Mains, Revised January 18, 1988.
- 105.2 All steel pipe installation work shall conform to the requirements of National Grid's Installation and Code Reconciliation: Section 200, Installation of Steel Gas Mains, Revised March 26, 1992.
- 105.3 The installation of the gas main on the bridge shall conform to the RIDOT Harbor Junction Bridge Installation Plans and Details and to the National Grid Central Bridge Installation Plans and Details.
- 105.5 Installations will terminate as close to the tie-in points as practical. Both tie-in locations must be aligned with the existing pipe when installed.
- 105.7 Any damage to the pipe or pipe coating should be immediately brought to the attention of National Grid construction department or the on-site inspector for inspection and, if necessary, repair or replacement.

106 PRESSURE TEST

- 106.1 Pressure test in accordance with paragraph 208A to a pressure of 90 psig for a minimum of 1 hour for the bridge and street main and for the tie-in section.
- 106.2 Test Media: Compressed air, inert gas, or any combination thereof. The contractor shall provide the air compressor and/or inert gas for all required pressure testing.

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**INSTALLATION SPECIFICATIONS
AND CODE RECONCILIATION
SECTION 200
INSTALLATION OF STEEL GAS MAIN
MARCH 21, 1975**

(Revised March 26, 1992 - See Revision List Page 8)

201 CONSTRUCTION SPECIFICS (FR 192.5, .303; ANSI 841.21)

- 201.01** All construction work performed by the Contractor shall be in accordance with the primary and supplemental publications of 49CFR 1921/; the ANSI Standard2/, B31.8-1968 Code; and National Grid Construction Specifications and Drawings. The Contractor shall also abide by the Terms and Conditions for General Construction. Any variation with, deletion from, or additions to the named references and the Project Drawings due to local conditions must originate from sound and specific reason. Arbitrary changes are not permitted. Remedial work required for noncompliance, unacceptable changes or additions, or acceptable changes or additions, where neither have received proper Company approval, will be at the Contractor's expense.
- 201.02** In the event specifics are detailed by both 49CFR 192 and ANSI B31.8, the more rigorous requirement shall control, unless specifically stated otherwise by the Company specifications.
- 201.03** All construction must meet the requirements of a Class 4 installation as defined by 49CFR 192 and as provided for by these specifications. All piping shall be designed for Design Hoop Stress levels of less than 20% of SMYS.
- 201.04** As used in this section "may" means "is permitted to" or "is authorized to," "may not" means "is not permitted to" or "is not authorized to," and "shall" is used in the mandatory and imperative sense.

202 GENERAL REQUIREMENTS (FR 192.305, .307; ANSI 841.221, .223, .271)

- 202.01** The Company has authority to enforce construction in accordance with Subsection 201, including the removal and replacement of any section of main that fails to meet the described standards.
- 1) The Federal Register, Volume 35, Number 161, Title 49 Part 192 (Under OPS, DOT) dated August 19, 1970 and effective November 1970, is designated as 49CFR 192. Specific paragraph references are preceded by FR to indicate source.
 - 2) The ANSI Standard B31.8-1968 is designated as ANSI B31.8. Specific paragraph references are preceded by ANSI as to indicate source.
 - 3) National Grid and its agents are designated as the Company.
- 202.02** Material Handling
- 202.02.1** Materials issued to the Contractor by the Company become his responsibility. The Contractor shall assume the responsibility of inventory and inspection before acceptance of materials. Methods of material transfer, handling, and storage are subject to the approval of the Company. Any material determined, by the sole determination of the Company, to be unsatisfactory for construction after acceptance by the Contractor, shall be repaired to the complete satisfaction of the Company, or replaced at the Contractor's expense. Any damage discovered previous to the Contractor's acceptance shall be replaced by the Company or repaired by the Contractor at a predetermined expense to the Company.
- 202.02.2** The hauling and stringing of pipe or other materials shall be performed in such manner as to prevent damage and to cause the least interference with the normal use of roadways or driveways. Gaps shall be left at intervals to permit passage of vehicles

and pedestrians. In the event transportation by rail or flatcar is involved, the provisions of API Standard RP5L1 shall apply.

202.02.3 Should it become necessary for the Contractor to store material, the Contractor shall do so at his expense and in a manner that will prevent damage from weather, vandalism, or other causes.

202.03 Primary material shall be provided by the Company. The Contractor shall provide all equipment necessary for installation of the facility as designated in Table 200-1, unless otherwise specified.

202.04 The Contractor shall provide all equipment necessary to test for gas tightness, structure integrity, and pigging as designated in Table 200-2, unless otherwise specified.

202.05 Permits for installation shall be provided by the Company. All permits for the transportation of pipe and other materials, and for construction procedures such as blasting shall be secured by the Contractor.

203 TRENCHING (FR 192.327; ANSI 841.16)

203.01 The route of the main shall be as shown on the plans. The specifications and drawings unless otherwise required by field conditions and specifically agreed to by the Company. The Contractor shall conduct his operations so that paving, driveway, and sidewalk cuts are bridged immediately after the trenching operation. Work shall be executed by the Contractor so that all fire hydrants and hydrant valves adjacent to the work area shall be readily accessible to fire-fighting apparatus. Under no conditions shall any materials or obstacles be placed within 15 feet of any fire hydrant or control valve unless by permit secured by the Contractor from the proper authorities.

203.02 All trenching operations shall conform to local Township, Town, City, State, or Federal specifications as required with regard to the overall length, width, and depth of the operation.

203.03 Trenching includes all excavation whether by trenching machine, power shovel, hand or other methods, which may be necessary for preparation of the pipe bed. The Company Specifications require a normal minimum cover of 44 inches. In no event shall depths less than 24 inches be allowed.

203.04 Payment for ledge removal by blasting or other means is limited to the specified dimensions of the trench plus an additional six inches (6") below the pipe for padding. Any ledge removal in excess, without the written approval of the Company, will be at the expense of the Contractor.

203.05 The normal width of the trench shall be the diameter of the pipe plus 14" unless otherwise required to meet minimum trench requirements, or as specified or agreed on in order to facilitate or expedite installation, or to improve the efficiency of construction so as to attain minimum cost of overall installation. Opening width may be increased as necessary for the installation of valves, fittings and appurtenances.

203.06 The minimum width of the trench shall be that which is necessary for the proper fabrication, installation, and padding or other protection of the pipeline and all materials and appurtenances associated with the system installation, unless otherwise specified by the Company.

203.07 A minimum clearance of three feet (3') shall be maintained between parallel runs, and a minimum clearance of six inches (6") shall be maintained at crossings of the Company main and a foreign structure, or shall be otherwise protected as specifically indicated by design detail. Where in-field conditions require variations with the above, the Design Engineer shall be consulted and methods of appropriate protection shall be in accordance with his specifications.

203.08 Pavement Cuts

203.08.1 Pavement shall be cut to the full trench width prior to excavation to provide a neat patch joint.

- 203.08.2** Where required by local governmental agencies, paving shall be cut six inches (6") wider than the trench in order to provide for a neat joint overlap on both sides unless one edge is adjacent to the curbing.
- 203.08.3** No payment for paving excavations wider than specified will be allowed unless specifically agreed to by the Company.
- 203.09** Surface materials must be kept separate from potential backfill material. The term "surface materials" includes asphalt, oiled sand, concrete, brick, paving stones, loam, and other surface substance which is dissimilar to the substrata materials of the trench excavation. Trenching includes removal and appropriate disposition of this material as the work progresses.
- 203.10** Care shall be taken in placing excavated material so that lawns and shrubs are not covered or damaged, and, if possible, streets and gutters are left unobstructed.
- 203.11** Excess excavated material that is acceptable for backfill shall be removed to a site satisfactory to the Company at the Contractor's expense.
- 203.12** Precautions shall be taken to avoid damage to any existing utilities. Proper support shall be provided before excavating below any utility line. However, when a utility line is accidentally damaged or broken, the Contractor shall immediately notify the authorities of the utility involve Contractor shall then cooperate and assist with immediate repair of damaged line, and in no case shall the trench be backfilled before approval by authorities of the involved utility is obtained.
- 203.13** Shoring will be provided in accordance with OSHA requirements, or where soil conditions are such that excessive widening of the trench occurs due to caving.
- 204 INSTALLATION**
- 204.01** Welding or other joining procedure must be continuous from the point of origin to terminus and intermittent installations along the route of traverse is not permitted without special approval of the Design Engineer.
- 204.02** Due to difficulties encountered in support and alignment of "double joined" sections of double random lengths of pipe, the practice of double joining is not allowed.
- 204.03** All connecting points with the existing main must be aligned and spaced for connection to the existing main when installed in order that connecting segments may be true and continuous.
- 204.04** Adequate methods shall be employed to prevent the entrance of dirt or debris into the pipe during stringing and installation.
- 204.05** All pipe and associated equipment shall be inspected prior to installation but after stringing to insure that damage has not occurred to the hardware or protective coating during handling. The provisions of Subsection 202.02 apply to any damages discovered.
- 205 WELDING OF STEEL (FR 192.223, .225, .227, .229, 231, .235, .241,.243, .245; ANSI 821.3, 823.1, 824.1, 825.1, .2, 828.1, 841.22)**
- 205.01 General**
- 205.01.1** Welds and welding procedures must be qualified under API Standard 1104 and Subpart E of 49CFR 192.
- 205.01.2** All welders must be qualified under National Grid Safety Department Standards and FR 192.227.
- 205.01.3** The quality of field welds will be checked by either destructive or nondestructive inspection.

205.01.3.1 Nondestructive inspection shall consist of radiographic examination over the entire weld circumference, unless otherwise specified.

205.01.3.2 Destructive testing requires a field weld to be cut from the pipe as a cylinder and tested according to the requirements of API standard 1104.

205.01.4 The Contractor will cooperate with the Company during inspection of welded joints. The welds inspected will be selected at random by the Company. Inspected weld shall be identified and noted on the Foreman's Work Order. If a weld is nondestructively tested, the testing company will examine the welds and classify approval or rejection.

205.01.5 If there is any reason to believe that a field weld is defective after nondestructive testing and it cannot be repaired in accordance with FR 192.245, it shall be removed from the line with the cost for cutting and rewelding borne by the Contractor. The welder may be disqualified for further construction if deemed appropriate by the Company.

205.02 Testing and Inspection

205.02.1 Initial weld inspection for steel main

205.02.1.1 A testing company shall be employed by the Company, at its expense, unless otherwise specified, to nondestructively test by techniques described in Sub-section 205.01.3.1 all welds done by each welder during his first day on the job. A minimum of five (5) welds shall be tested during the testing period. Results of the test must be satisfactory and shall be reported to the project inspector and the Company Safety Department before proceeding with further construction.

205.02.1.2 The radiographic contractor must provide documentary evidence that the radiographer who interprets the film is a certified SNT-TC-1A Level 11 or Level 111 radiographer.

205.02.2 In addition to Subsection 205.02.1, the Company will inspect, at its expense, 10% of the project's welds. The specifications of Subsections 205.01.4 and 205.01.5 will apply.

205.03 Welding Specifics

205.03.1 A firm and positive grounding electrical connection must be established. Connecting apparatus equal to or exceeding the requirements of the Pipetron Quick-Bond Clamp is required, and jury-rig attachments such as homemade spring bars, etc., are disallowed.

205.03.2 Arc burns have been found to cause serious stress concentrations in pipe. The metallurgical notch caused by arc burns shall be prevented or eliminated in all mains. Arc burns resulting from faulty grounds and connections are not allowed and must be removed by cutting out the damaged portion of the pipe as a cylinder and replaced at the Contractor's expense. (See Subsection 209.)

205.03.3 It is suggested that grinding be given consideration after both the root and hot pass of welds in order to assure a clean field for subsequent welding. This practice may obviate an area of potential weld test failure.

205.03.4 The different wall thickness between pipe and fittings requires that the thicker wall be ground or the weld joint backwelded to avoid stress concentrations.

206 BENDS, ELBOWS, AND FITTINGS (FR 192.147, .149, .155, .313, .315; ANSI 831.21, .22, .23, .3, .4, .5, 841.23)**206.01 Flanges, Gaskets and Bolting**

- 206.01.1** Steel pipeline flanges shall be manufactured in accordance with MSS Standard SP-44.
- 206.01.2** Flange connections between 150 psi steel and Class 125 cast iron flanges will be made with flat faced flanges, full faced gaskets, and allow steel bolts conforming to ASTM Specification A-193.
- 206.01.3** Flange connections between steel flanges will be made with raised face flanges, flat ring gaskets, and alloy steel bolts conforming to ASTM Specification A-193.
- 206.01.4** PSI products flange insulating gasket kits shall be used wherever points of isolation are specified in Section 900. Gasket kit specification is as follows: PSI Gasket Seal Type E with Phenolic Retainer and Nitrile (Buna N) Seal equipped with one piece sleeve and washers and steel washers. Alloy-steel bolts conforming to ASTM Specification A-193 with A-194 nuts shall be used in conjunction with raised face flanges when both are steel and with flat face flanges when one is steel and the other Class 125 cast iron.

206.02 Elbows and Bends

- 206.02.1** Miter bends shall be disallowed.
- 206.02.2** Elbows, reducers, tees, laterals, and other fittings shall be standard wall conforming with ASTM Speciation A-234, Grade WPB.
- 206.02.3** Field formed cold bends may be used for changes of direction less than 1-1/2 degrees per diameter length. They must be free from buckling, cracks, or other evidence of mechanical damage, and shall be formed with an appropriate die or shoe such that the deformation does not produce a difference between the maximum and minimum diameters in excess of 2.5% of the nominal diameter.
- 206.02.4** For greater changes in direction than that provided for in Subsection 206.02.3, factory-made wrought-steel welding elbows or transverse segments, cut there from shall be used. For tranverse segments, the arc length measured along the crotch shall be at least on inch (1") on pipe sizes two inches (2") and larger.

206.03 Branch Connections

- 206.03.1** Tees and branches for branch connections with d/D ratios greater than 1/3 and operating at less than 20% of SMYS, shall be fabricated with factory manufactured fittings having smooth configuration and manufactured in accordance with applicable codes. Where the complete fitting cannot be used, full encirclement fittings shall be provided in accordance with Figure 831-D of the ANSI B31.8.
- 206.03.2** Tees or laterals for branch connections or manifolds, with d/D ratios of less than 1/3 and operating at less than 20% of SMYS, may be field- or shop fabricated from pipe, if approved by the Design Engineer.
- 206.03.3** Thread-o-let and weld-o-let penetrations shall be clean cut holes for the full diameter of the connection.

207 SURFACE DAMAGE AND IMPERFECTIONS (FR 192.309)

- 207.01** Inspection for the detection of dents, gouges, and grooves shall be made prior to the pipe section being welded into the line, or just ahead of the backfilling operation. A dent is a depression which produces a gross disturbance in the curvature of the pipe wall without reducing the pipe wall thickness. A gouge or groove results where the metal of the pipe has been disrupted producing

minor changes in wall thickness and resulting points of stress concentrators.

- 207.02** A dent shall be removed where: it contains a stress concentrator such as a gouge, groove, or scratch; or if the dent results in a depression of more than 2% of the nominal pipe diameter, enclosed in an area of less than one pipe diameter in any direction. Gouges and grooves shall always be removed.
- 207.03** Dents requiring removal shall be removed by cutting out the damaged portion of the pipe as a cylinder, or shall be repaired by installing full encirclement reinforcing segments to completely lap the damaged area. Patching or coupon replacement is not permissible.
- 207.04** A gouge or groove shall be removed by smoothly grinding or sanding, provided that the remaining wall thickness is not less than that required by the pipe specification tolerances. Where the remaining wall thickness becomes less than the pipe specification tolerances, repair must be made by cutting out the damaged portion of the pipe as a cylinder. Patching or coupon replacement is not permitted.

208 INTERNAL CLEANING

- 208.01** Prior to the pressure test, each section of completed construction shall be "pigged" to remove any scale, dirt, or debris which may have been inadvertently entrained. Pigging shall be repeated until the exit air is free of traces of dust and dirt. The Contractor shall be responsible, at his expense, for locating and removing a trapped pig, and shall repair the main as may be necessary. It is recommended that a signaling device be incorporated in the pig for easy location. The pig used by the Contractor must be approved by the Company.
- 208.02** Care must be exercised during the pigging operation to prevent the pressure from exceeding the design pressure of the main.
- 208.03** The Contractor shall install a device to restrain and retain the pig upon exit from the main such that injury or damage to persons or property will be prevented. Any device judged unsuitable by the Company may be rejected.

209 PIPE TESTING (FR 192.507, .509, .619; ANSI 841.3, .42, .43, .44, .5, 845.22)

- 209.01** New mains shall be tested after construction and before being placed in operation to demonstrate gas tightness and structural integrity.
- 209.02** All steel welded main shall have a design operating pressure of 75 psig, be qualified for a Class 4 location as defined by the Register, and be tested to a minimum pressure of 150 psig, unless otherwise specified.
- 209.03** Testing procedure shall be by either standup static test or by direct inspection methods as designated in the Job Specifications.
 - 209.03.1** Standup static testing procedure shall require a minimum of 24 hours, after compression, for stabilization, and a static period of an additional 24 hours. The temperature and pressure shall be recorded immediately after the initial compression, after the 24-hour stabilization period, and after the 24-hour static test period. Pressures adjusted for temperature differential must remain static over the test period.
 - 209.03.2** Direct inspection testing procedure shall require that all welds and mechanical connections be soap tested by thoroughly soaping the area and determining that no leaks are evident. During the test, the soaped area must be thoroughly shielded from wind or other disturbances. A standup period, at the required test pressure, must be maintained for a minimum of one hour prior to initiation of the test.
 - 209.03.3** The pipe should be open and free to the test when possible.

- 209.04** The test medium shall be air, inert gas (N₂ or CO₂), or any combination thereof, unless otherwise specified.
- 209.05** Costs shall be borne by the Contractor for repair of defects disclosed by testing, and any further testing necessitated thereby, except that the Company shall assume responsibility for defects which are shown to be solely attributable to materials which the Company has supplied.
- 209.06** All temporary connections to the line shall be repaired to the satisfaction of the Company.

210 PADDING AND BACKFILL (FR 192.319; ANSI 841.273)

- 210.01** Backfill must be performed in a manner to provide firm support under the pipe. Care shall be used to prevent damage to the coating, by such means as the use of rock-shield material, or by making the initial fill with rock-free material to a sufficient depth over the main to prevent rock damage. (See Subsection 210.08)
- 210.02** Where it is indicated that soil conditions will be unstable, a clean backfill material must be provided around the pipe to provide continuous support along the section. (Clay soils can undergo severe volume changes resulting in soil plasticity with corresponding shifting and heaving producing increased secondary stresses on the pipeline.)
- 210.03** The Contractor shall provide all equipment necessary to place padding and backfill. Padding material shall be uniform natural bank sand, graded from all particles sizes smaller than the No. 10 sieve and coarser than a No. 200. Backfill material shall consist of natural bank gravel having durable particles graded from fine (greater than No. 200) to coarse (2-inch) in a reasonable uniform combination with no boulders or stones larger than 2-inch in size. Padding and backfill material must be free of lumps, frozen material, cinders, ash rubbish, paving material, clay, loam, rocks and any other material which might subject pipe, associated equipment, or coating, to injury. All padding and backfilled material must meet the approval of the Company. All wood used for blocking or shoring must be removed from the trench prior to the backfill operation.
- 210.04** Where suitable material, approved by the Company, for either padding or backfill is available along the line of traverse, the Contractor shall haul and place such fill under the contract price without extra cost. Where suitable fill is not available from excavated materials, by the sole determination of the Company, the Contractor shall procure, haul, and place suitable gravel to the satisfaction of the Company.
- 210.05** The Contractor shall submit a unit price for gravel fill, purchased, hauled, and placed, and shall be entitled to payment determined as the product of said price quotation and placed quantities only when such quantities are appropriately measured or otherwise accounted for at delivery and approved by the Company as correctly received. Gravel needed to replace fill which has been excavated from the trench and made unusable, in the opinion of the Company, due to failure by the Contractor to exercise reasonable care to save such otherwise usable fill in accordance with these specifications, and gravel to fill that portion of a trench opening which exceeds the width of the nominal run of the trench or the maximum trench width otherwise specified, whichever is the lesser, will be provided by the Contractor without extra cost, unless previously and specifically agreed to by the Company.
- 210.06** Where the Contractor fails to specify a unit price for gravel fill as an extra in his original quotation, no payment will be allowed.
- 210.07** Where padding is necessary in the opinion of the Company, it shall be placed in the trench bottom to a minimum depth of four inches (4") and to a minimum dimension of six inches (6") elsewhere around the pipe so as to completely encase and protect the pipe, piping materials, and coating from injury.
- 210.08** Wherever, in the opinion of the Company, the conditions of trench and surroundings is such that damage to any coating used would result from using machine methods of placing backfill to a depth of six inches (6") above pipe, Contractor shall place same by hand shoveling. This backfill, to a depth of six inches (6") above the top of appurtenances along the top of the main, shall be

placed as soon as possible after the pipe has been lowered in the trench.

- 210.09** Backfill shall be carefully placed under the main and any appurtenances, and compaction of the backfill to the original density is required by wetting and/or tamping by six-inch (6") layers to a level six inches (6") above the top of appurtenances along the top of the main. Similar compaction of the remainder of the trench shall be performed if required by local governmental authorities.
- 210.10** Whenever crossing under an existing Cast Iron or Ductile Iron main is required, the backfill material below the Cast Iron or Ductile Iron main shall be compacted to its original density by wetting and tamping in four-inch (4") layers to a level six inches (6") above the top of appurtenances along the top of the main.
- 210.11** The trench shall be backfilled to a point of within ten feet (10') of the end of the completed main installed each day. The trench may be left open overnight, to the extent necessary to permit testing by direct inspection methods, provided the amount is not in excess of that allowed by local governmental authorities.

211 RESURFACING

- 211.01** All roadway paving, sidewalk resurfacing, backfilling and compaction shall conform to local Township, Town, City, State or Federal specifications as required.
- 211.02** All resurfacing shall be kept in repair by the Contractor for two years. If settling or any other defect is evident, the Contractor shall make repairs at his expense until the resurfacing is determined acceptable by all governmental bodies concerned.

212 PURGING (FR 192.629, .751; ANSI 841.28)

- 212.01** A minimum of two (2) tested gasscopes are required for each test when purging. Continuous sampling with two (2) gasscopes at each location is required during each purge and all welding and cutting operations.
- 212.02** Purging During Welding and Cutting Operations
- 212.02.1** If no gas is detected on the L.E.L. scale of either of two (2) gasscopes, or the reading is below 10% L.E.L., it is safe to proceed without adding nitrogen.
- 212.02.2** If gas is detected and complete shut-off is impossible or impractical, nitrogen must be added either upstream or downstream of the welding or cutting operation until the combustible gas concentration of the mixture is decreased to a point where the admixture of any additional amount of air will not result in a flammable mixture.
- 212.02.2.1** If nitrogen is added downstream of the welding or cutting operation, it is safe to proceed only when sufficient nitrogen has been added to reduce the L.E.L. readings taken upstream of the welding or cutting operation with two (2) gasscopes, to below 30% L.E.L. in nitrogen
- 212.02.2.2** Although it is normally preferred that nitrogen be added downstream of the welding or cutting operation, specific conditions may require that nitrogen be added at an upstream location. If nitrogen is added upstream of the welding or cutting operation, it is safe to proceed only when sufficient nitrogen has been added to reduce the L.E.L. readings taken downstream of the welding or cutting operation with two (2) gasscopes, to below 20% L.E.L. in nitrogen.

Revision	Section	Date	By
	210.03	1/18/88	PGR
	206.01.4	3/26/92	JMP

**INSTALLATION SPECIFICATIONS
AND CODE RECONCILIATION
SECTION 200A
INSTALLATION OF POLYETHYLENE GAS MAIN
AUGUST 6, 1976
(REVISED JANUARY 24, 1979)
(REVISED JANUARY 18, 1988)**

201A CONSTRUCTION SPECIFICS

- 201.01A** These specifications set forth standards to which the installation of piping shall adhere to.
- 201.02A** The specifications cover the installation and handling procedures for polyethylene pipe, tubing, and associated fittings when used for mains and service piping.
- 201.03A** Piping material is manufactured as outlined by the Department of Transportation Title 49, Part 192, TRANSPORTATION OF NATURAL AND OTHER GAS BY PIPELINE - MINIMUM SAFETY REGULATIONS and the ANSI B 31.8 Code for GAS TRANSMISSION AND DISTRIBUTION PIPING SYSTEM based on ASTM D-2513 SPECIFICATION FOR THERMOPLASTIC GAS PRESSURE PIPE TUBING FITTINGS.

202A GENERAL REQUIREMENTS

- 202.02A** The Company has the authority to enforce these specifications in accordance with Section 200 (Installation of Steel Gas Main, 3/21/75) and Section 200A (Installation of Polyethylene Gas Main, 8/6/76), (Revised January 24, 1979). This includes the stipulation that: "Any variation with, deletion from, or additions to the named references and the Project Drawings due to local conditions must originate from sound and specific reason. Arbitrary changes are not permitted. Remedial work required for noncompliance, unacceptable changes or additions, or acceptable changes or additions, where neither have received prior Company approval, will be at the Contractor's expense."

203A MATERIAL STORAGE AND HANDLING

- 203.01A** For periods of storage in excess of two weeks, the piping material shall be stored indoors, or shall be covered so as to shield it from direct sunlight. It shall be stacked so that no out-of-round flattening, or "egging" results. Exposure to excessive heat or harmful chemicals shall be avoided.
- 203.02A** When the polyethylene material must be transported, the pipe, tubing and fittings shall be handled carefully. Proper support so as to minimize movement between the pipe and its support to avoid kinking, cutting, gouging, or abrading the surface will be maintained.
- 203.03A** Prior to actual installation, polyethylene piping shall be stored on the job site in a cool dry place protected from direct sunlight.
- 203.04A** Polyethylene pipe shall not be left exposed in the work area during the absence of the installation crew, because of possible damage by vehicular or foot traffic, construction equipment and miscellaneous foreign objects.

204A INSTALLATION PROCEDURES

- 204.01A** The polyethylene pipe must be carefully inspected for cuts, gouges, deep scratches and other imperfections before use. Defective pipe will be rejected.
- 204.02A** Adequate attention must be given to polyethylene pipe during placement in the trench to prevent kinking, stretching or the striking of sharp objects. The pipe shall be snaked in the trench to permit contraction. The extra length installed shall amount to one foot per 100 feet of trench.

- 204.03A** The bottom of the trench shall be as smooth and level as practical and free of rocks and other abrasive materials. Sand or soil, free of stones and other abrasive materials, shall be used as base to protect the polyethylene piping from damage. A minimum of six inches of padding sand will be installed at the bottom of the trench.
- 204.04A** Polyethylene mains require a normal minimum cover of 44 inches. Depths less than 24 inches will not be allowed.
- 204.05A** Polyethylene service pipe shall be installed at least 30 inches below grade between the curb and the property line. The cover at the foundation wall will be 24 inches below finished grade. Depths less than 18 inches cover on private property and 24 inches cover on public property will not be allowed.
- 204.06A** A minimum clearance of three feet shall be maintained between parallel runs. A minimum clearance of twelve inches shall be maintained at crossings of a Company main and a foreign structure, or shall otherwise be protected as specifically indicated by design detail. Where in-field conditions require variations with the above, the Design Engineer shall be consulted and methods of appropriate protection shall be in accordance with his specifications.
- 204.07A** Polyethylene pipe may be bent in conformity with the natural curve of a reel. Otherwise changes in direction must be made with suitable fittings. Miter bends are not permitted and neither are bends which exhibit buckles, cracks, or other evidence of damage. There shall be a minimum of 3 feet straight run out of a branching tee, coupling, service tee, meter riser or any rigid filling before the initiation of a bend.
- 204.08A** Polyethylene pipe or tubing will be cut utilizing special cutters designed for plastic pipe to insure square cut ends.
- 204.09A** Adequate pipe anchorage will be properly installed as noted on design specifications.

205A PIPELINE SUPPORTS

- 205.01A** When polyethylene pipe or tubing is used and soil conditions are indicated to be unstable, additional support shall be provided by installing a protective polyethylene sleeve.
- 205.02A** A protective polyethylene sleeve will be installed at metal-to-plastic transition fittings, at services with a saddle and tapping tee, and at those locations where forces on the pipe may result in bending and shear stresses.
- 205.03A** The protective polyethylene sleeve will be installed in such a way that it fits securely around the pipe being protected. It will be backfilled and compacted as soon as possible to provide ground support across the span. The installation of a protective polyethylene sleeve does not eliminate the need for proper backfilling and compaction around and under the sleeve. Care must be exercised to insure that the protective polyethylene sleeve does not move from its intended position during backfilling and tamping.

206A POLYETHYLENE FUSION AND MECHANICAL JOINTS

- 206.01A** When field joints are required, the polyethylene pipe shall be cut several inches too long and the extra length distributed as slack as near as possible to the joint. This will provide for contraction of the polyethylene pipe due to temperature changes and should be in proportion of 12 inches per 100 feet of pipe.
- 206.02A** Heat-fusion joints. Each heat-fusion joint on polyethylene pipe must comply with the following:
- (1) A butt heat-fusion joint must be joined by a device that holds the heater element square to the ends of the piping, compresses the heated ends together, and holds the

pipe in proper alignment while the polyethylene hardens.

- (2) A socket heat-fusion joint must be joined by a device that heats the mating surfaces of the joint uniformly and simultaneously to essentially the same temperature
- (3) Heat may not be applied with a torch or other open flame.

206.03A Heat-fusion joint will not be disturbed until it has properly set for 10 minutes. Cooling time for "rough handling" will be 20 minutes after the last joint has set.

206.04A Any fused joint of questionable integrity will be removed and repaired at contractor expense.

206.05A Mechanical joints - each compression-type mechanical joint on polyethylene pipe must comply with the following:-

- (1) The gasket material in the compression coupling must be compatible with the polyethylene.
- (2) A metal insert stiffener must be used in conjunction with the coupling.
- (3) They must effectively resist pull-out forces caused by thermal contraction or by external loading forces.

207A VALVES AND METER RISERS

207.01A Valves installed in polyethylene systems must be properly anchored to prevent rotational stresses when operated.

207.02A Meter risers shall be installed to permit easy installation of the meter at the foundation wall.

207.03A Curb boxes or other enclosures shall not be supported by the polyethylene pipe, or in any way impose stress on the pipe.

208A PRESSURE TESTING PROCEDURES

208.01A Pressure testing will not be initiated until 20 minutes after the final heat fused joint has set.

208.02A In accordance with the rating of polyethylene pipe and tubing, installations shall be tested to a pressure of at least 1.5 times the maximum operating pressure or 90 psig, whichever is greater. The test pressure, however, must not exceed three times the design pressure of the pipe or 100 psig, whichever is the least. All joints will be soap tested at this pressure before being backfilled.

208.03A Temperature of the polyethylene pipe shall not exceed 100°F during test.

209A PIPE LOCATOR AND MARKING TAPE

209.01A To facilitate location of directly buried pipe, No. 12 AWG THW coated copper wire will be strung along the full length of the pipe. The locator wire will be secured to the steel meter riser at the building wall. If the polyethylene service is connected to a polyethylene main, the locator wires for both the service and the main must be connected by stripping sufficient insulation to twist the bare copper end of the service wire onto a bare section of the main wire within six inches (6") of the service tee. This connection must be thoroughly coated with TAPECOAT MASTIC.

209.02A The locator wire and marking tape shall be installed after backfilling and tamping 12 inches above all direct burial polyethylene mains and stubs. The marking tape is high-visibility orange and is imprinted with the words, "CAUTION BURIED GAS LINE BELOW".

210A STATIC ELECTRICITY

210.01A Procedures to minimize the possibility of static electricity will include keeping the pipe wet (water spray, wet rag, wet rope), wetting down both the polyethylene pipe and excavation hole before attempting to work on the piping, and by performing squeeze-off operations in a separate excavation hole, removed from and upwind of any escaping gas.

211A INSPECTION AND REPAIR

211.01A If any section of polyethylene pipe or tubing is found to be kinked, flattened, or out-of-round, or if there is evidence of damage due to sunlight, excessive heat, or chemicals, the damaged section must be replaced.

211.02A All metal fittings and bare metallic surfaces used in conjunction with polyethylene pipe shall not be coated by any material which requires the application of heat. Fittings and surfaces requiring coating protection shall be protected by thorough application of Tapecoat Mastic.

211A PADDING AND BACKFILL

212.01A Padding sand will be installed in such a way that there will be a layer of 6 inches below and 12 inches above the pipe.

212.02A Care must be exercised when backfilling to insure that no sharp objects or rocks will be in contact with the pipe. Mechanical tamping shall not be used until 12 inches of cover has been placed over the pipe.

212.03A Special care shall be exercised to backfill and tamp the excess soil at the service tee and at all other joints of the polyethylene system.

212.04A The Contractor shall provide all equipment necessary to place padding and backfill. Padding material shall be uniform natural bank sand, graded from all particles sizes smaller than the No. 10 sieve and coarser than a No. 200. Backfill material shall consist of natural bank gravel having durable particles graded from fine (greater than No. 200) to coarse (2-inch) in a reasonably uniform combination with no boulders or stones larger than 2-inch in size. Padding and backfill material must be free of lumps, frozen material, cinders, ash, rubbish, paving material, clay, loam, rocks and any other material which might subject pipe, associated equipment, or coating, to injury. All padding and backfill material must meet the approval of the Company. All wood used for blocking or shoring must be removed from the trench prior to the backfill operation.



10/01/12

Guidelines for Working Around Gas Utilities

Notification of Construction

National Grid requests at least six week advanced notification prior to the start of construction to perform scheduled work in the proposed project area. Be aware that some gas work cannot be performed during the normal heating season.

Support and Protect

Contractor must call Dig Safe to have the gas mains and services marked out before construction. Care must be exercised when saw cutting over any gas infrastructure, especially services, which are more shallow than the main. Depth of gas mains vary. Contractor shall dig test pits in order to ascertain exact locations, cover and invert elevations, clearances, alignment and operating status of existing gas facilities. Contractor shall exercise extreme caution when excavating in the vicinity of any gas facility. Hand excavation shall be performed to locate all gas facilities and whenever digging within 24" of gas facilities. If cover over gas piping is removed the required cover must be replaced, or if not feasible, National Grid must be notified for review of the issue. Undermined gas pipe must be adequately supported and protected from damage. Contact National Grid engineer for guidelines regarding proper pipe support. Significant vibration from pile driving and such may negatively impact gas facilities, particularly cast iron mains and regulator station vaults. Contact National Grid engineer prior to performing such activities as well as operations which may undermine gas facilities such as micro-tunneling, jacking, directional drilling, etc.

Gas Leaks

For any gas leak please call the appropriate number immediately.

Greater Boston - 800-233-5325

Other Massachusetts – 800-548-8000

Rhode Island – 800-640-1595

Types of Gas Facilities

Gas mains and services are made of several different materials and contain a wide range of pressures. Typical materials used for buried gas pipe includes bare steel, coated steel, plastic, cast iron, wrought iron, ductile iron, and copper. Never assume that a pipe is not gas. At times gas lines are inserted into older lines to save excavation cost.

Exposure of Gas Facilities

If any gas mains or services become exposed, National Grid must be notified to inspect the line before backfilling. Also any damage that may have been made to the pipe or pipe coating will need to be repaired by National Grid before backfilling. Contact our Dispatch office at (877) 304-1203 for inspection. It is important that even minor damage or scrapes be reported to National Grid. Backfill shall be 6" of sand around the gas line and clean compacted fill above.

**Regulator Stations**

Gas regulator stations are particularly critical facilities and National Grid must be notified whenever work is to take place within 200 feet of a station. Regulator stations are typically in buried vaults accessed through either manhole covers or aluminum doors. **ONLY AUTHORIZED NATIONAL GRID EMPLOYEES SHALL OPEN A REGULATOR STATION VAULT.** Be aware that a complex nest of piping and valves often exists in the vicinity outside the vaults.

Blasting

National Grid must be notified of any blasting that will take place within 200 feet of a gas utility. National Grid must be supplied with a detailed blast plan for blasting in the vicinity of gas facilities. The evaluation of the blast plan by a National Grid engineer may take some time, therefore, blast plan data should be submitted at least two weeks prior to the planned blasting. As a general rule blasting will not be permitted within 10 feet of a gas line and PPV at the nearest gas pipe shall not exceed 5 in/sec. PPV at the nearest gas main shall be monitored.

Valves

Access to gas valves must be maintained throughout construction and left at grade at the end of construction. Should valve boxes be damaged and need to be replaced National Grid will supply replacements upon request. **NEVER OPERATE A GAS VALVE. ONLY NATIONAL GRID SHALL OPERATE GAS VALVES.**

Clearance

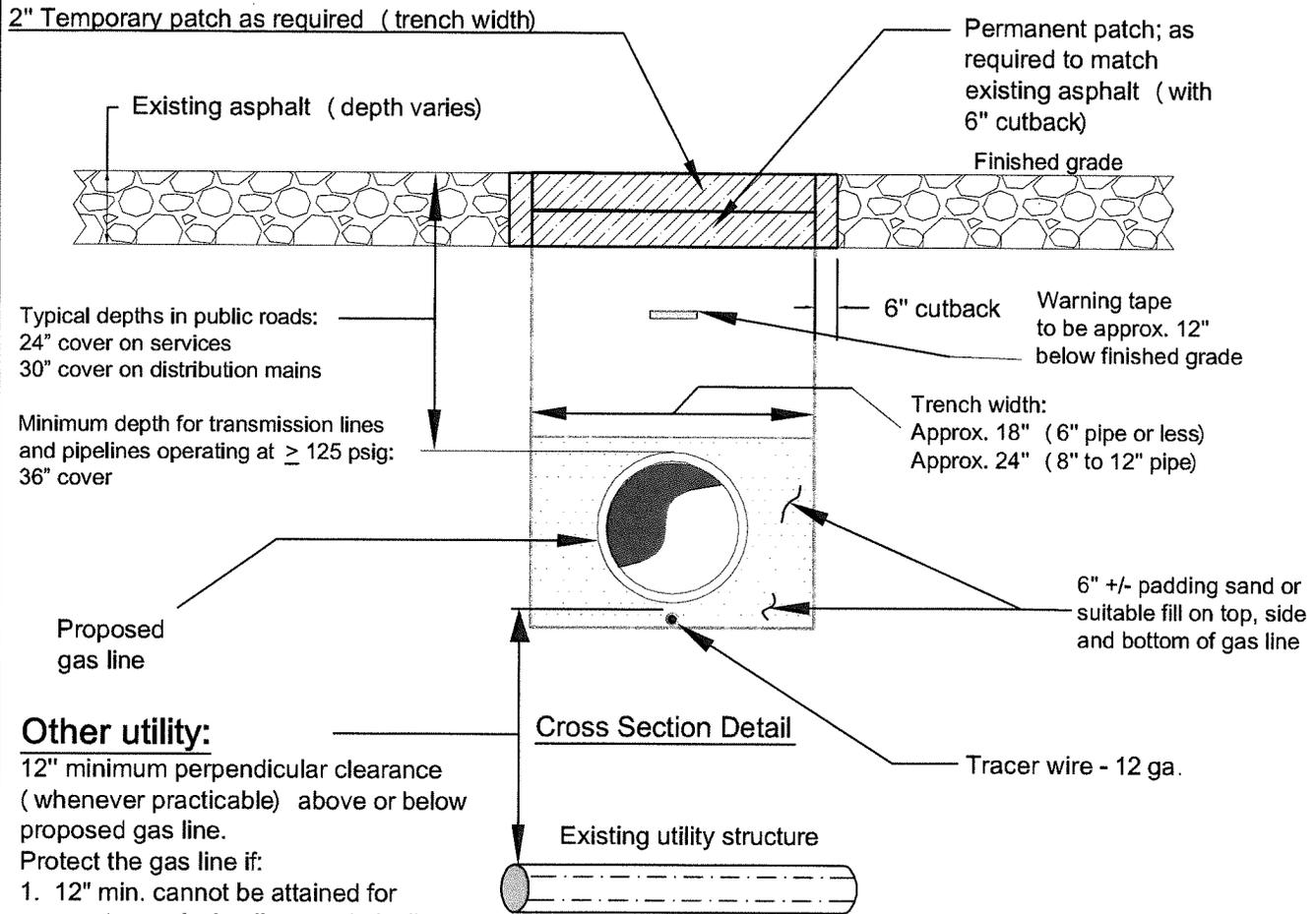
Adequate clearance must be provided when installing other utilities, foundations, structures, etc. Contact National Grid engineer for guidance.

**NATIONAL GRID APPROVED
 GAS PIPING CONTRACTORS
 IN
 RHODE ISLAND**

Last Update
 7/30/2014

Contractor Name	Address or PO Box	Town	State	Zip	Contact Name	Contact Phone	Contact Email	Notes
AGI Construction Inc	34 Applan Way	Smithfield	RI	02917	Mark Albert	401-233-0021	malbert@agiconstruction.com	All
GPL Construction Inc.	2612 Victory Highway	Glendale	RI	02826	Mike Gaudette	401-568-2810	mgaudette@gpl-construction.com	All
InfraSource Construction, LLC	600 Clark Ave - Suite 3	King of Prussia	PA	19406	Stephen Sarmento	610-207-8661	stephen.sarmento@infrasourceinc.com	Plastic Installs ONLY

Typical Utility Crossing and Trench Guidelines



Other utility:

12" minimum perpendicular clearance (whenever practicable) above or below proposed gas line.

Protect the gas line if:

1. 12" min. cannot be attained for gas transmission lines and pipelines operating at \geq 125 psig.
2. 6" min. cannot be attained for distribution mains.
3. 4" min. cannot be attained for services.

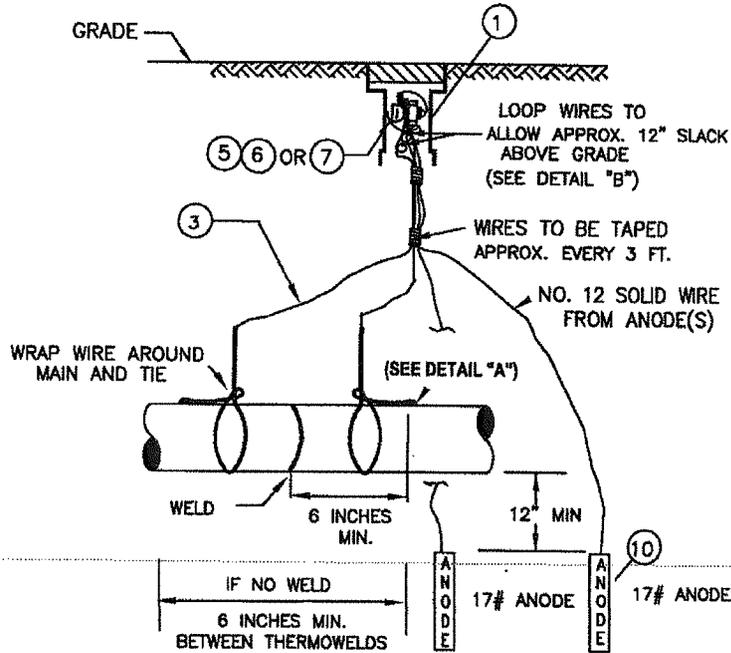
Minimum clearance when protection is provided against damage is 2" for all gas lines.

Pipeline backfill will consist of suitable materials (medium to coarse sands with little or no silts) placed in layers of no more than 8" to 12" after compaction. Trench spoil materials suitable for backfilling will be mechanically compacted to the industry standards of 95% (as measured by Drop-Cone Penetrometer method) or until a density comparable to the unexcavated material is achieved.

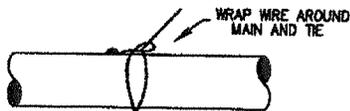
<p>nationalgrid RI</p>	<p>TYPICAL UTILITY CROSSING AND TRENCH GUIDELINES</p>	
<p>Key Changes:</p>	DATE: 09/15/2014	EFFECTIVE DATE: 09/15/2014
	DESIGN: N. COSTANZO	<p>STD. DWG. NO. CS-CNST002</p>
	DRAWN: N. COSTANZO	

TWO WIRE TEST STATION WITH ANODE(S)

Can be installed without anodes

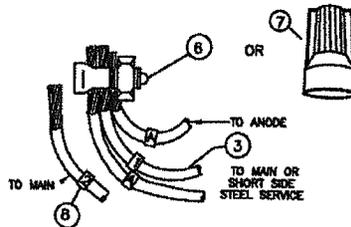


ATTACH WIRE IN ACCORDANCE WITH APPROVED THERMOWELD PROCEDURE



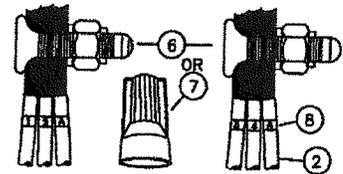
DETAIL "A"

Two wire test station
Shown with 2 anodes



DETAIL "B"

Four wire test station



DETAIL "C" (typ)

SHT. 3 OF 4 030026-CS

nationalgrid

ALL REGIONS

INSTALLATION OF TEST STATIONS FOR CATHODIC PROTECTION

REVISIONS: NEW

DATE: 07/15/2010

EFFECTIVE DATE: 07/15/2010

DESIGN: PG

STD. DWG. NO.

APPROVED: PS

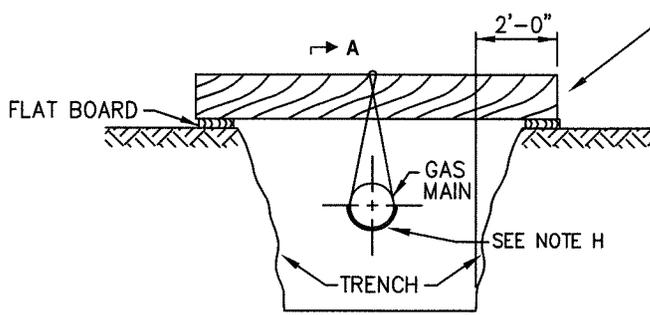
NO. **030026-CS**

MATERIAL LIST

	Description	Down State Item I.D	Upstate Item I.D	New England Item I.D	Rhode Island Item I.D	MATERIAL NOTES
1	TEST BOX WITH COVER TEST BOX 9" SQUARE HEAVY DUTY COVER FOR 9" SQUARE BOX	00308058 00303157 00308014	60-08-344 UPSTATE BOXES COME IN ONE PIECE	00308058 00303157 00308014	4800898 (NM - 4) in Cumb & 4800895 (Sm - 445) or 4800897 (Lg - 556) in Prov	NON LOCKING COVER. DISCARD FOOT PIECE. WEIGHS 95 LBS, STREET USE, WITHOUT COVER NON-LOCKING COVER
2	WIRE, NO. 8, 7 STRAND	00199229	4800485	00199229	4800485	TEST WIRE ONLY, NOT FOR GROUND BEDS, UPSTATE AND RI WIRE HAS 19 STRANDS.
3	WIRE, NO. 6, 7 STRAND	00199002	Non-stock	Non-Stock	Non-stock	BOND WIRE ONLY, NOT FOR GROUND BEDS
4	WIRE 1/0 - 19 STRAND 600 V -1/C	00199429	Non-stock	Non-Stock	Non-stock	USE IN STRAY CURRENT AREAS
5	TAPE, PVC - 3/4" WIDE	00189008	2005620	00189008	2005620	NOT FOR PIPE COATING.
6	CONNECTOR, SPLIT BOLT, TYPE 6 CONNECTOR, SPLIT BOLT, TYPE 1/01	00124003 00124018	20-14-471	00124003 00124018	Non-stock	USE WITH NO. 6 CABLE USE WITH 1/0 CABLE
7	CONNECTOR, TWIST-ON WIRE NUT	00125663	08-11-102	00125663	08-11-102	
8	TAG, ADHESIVE NUMBER 1 NUMBER 2 NUMBER 3 NUMBER 4 LETTER A	00339001 00339002 00339003 00339004 00339007	9202349 9202350 9202351 9202352 9202353	00339001 00339002 00339003 00339004 00339007	9202349 9202350 9202351 9202352 9202353	LABEL WITH #1 (N) OR (E), CONSECUTIVELY TO (S) OR (W) SEE DETAILS "B" AND "C" USE TO LABEL ANODES
9	GROUNDING CELL	Non-Stock	60-10-761	Non-Stock	Non-stock	AS SPECIFIED BY CORROSION ENGINEERING
10	ANODE, MAGNESIUM 17LBS	00304001	48-00-460	00304001	48-00-460	SATURATE WITH WATER BEFORE BACKFILL. ANODE MAY BE INSTALLED VERTICALLY OR HORIZONTALLY.

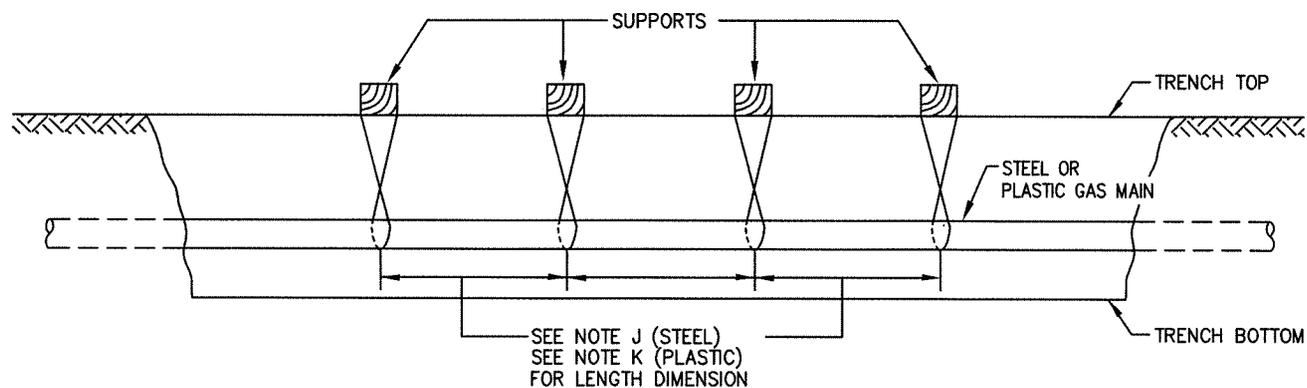
SHT. 4 OF 4 030026-CS

National Grid Gas Company Supplemental Information

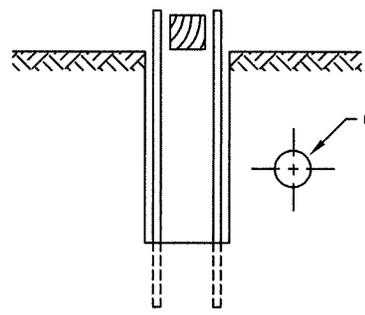


FOR TRENCH WIDTHS UP TO 12'-0", A 14'-6" x 6" TIMBER MAY BE USED. FOR TRENCH WIDTHS OVER 12'-0" AND LESS THAN 30'-0" USE A 6" - .250 WALL PIPE.

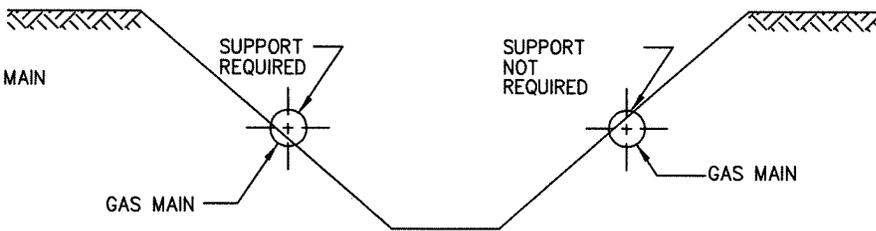
EXPOSED SUPPORT



SUPPORTED LENGTH A-A



ADEQUATELY SHORED TRENCH
DETAIL A
SEE NOTE B



INADEQUATELY SHORED OR UNSHORED TRENCH
DETAIL B
SEE NOTE B

nationalgrid

LI-MA-NH-NYC

SUPPORT REQUIREMENTS FOR EXPOSED & UNDERMINED STEEL OR PLASTIC GAS FACILITIES

REVISIONS CLARIFIED NOTES B & C ADDED NOTE N.

DATE: 07/01/2003	EFFECTIVE DATE: 03/24/2006
DESIGN: A. GIULIANI	STD. DWG. NO. CNST-6045
DRAWN: P. DIMAIO	

NOTES:

National Grid Gas Company Supplemental Information

- A. THIS CONSTRUCTION STANDARD SHALL BE USED TO SUPPORT PLASTIC OR STEEL GAS FACILITIES WHICH ARE UNDERMINED AND EXPOSED BY CONSTRUCTION ACTIVITY.
- B. IF AN EXCAVATION IS MADE AT ANY DISTANCE PARALLEL TO THE GAS FACILITY WITH ADEQUATE OSHA STRUCTURAL SHORING, AS SHOWN IN DETAIL "A", OR IF A STABLE SOIL CONDITION WITH SUFFICIENT COVER ABOVE THE PIPE'S CENTERLINE EXISTS, AS SHOWN IN DETAIL "B", THEN SUPPORTS ARE NOT REQUIRED. UNSTABLE SOIL IS DEFINED AS A SOIL WHICH CAN CAUSE "SOIL RUN OUT" FROM BENEATH THE PIPE (e.g., WASHOUT, SOFT CLAY, etc.) OR CAN SHIFT DUE TO CONSTRUCTION ACTIVITY, VIBRATIONS, etc.; AND CAUSE A SOIL SCENARIO TO OCCUR AS SHOWN IN DETAIL "B" TO REQUIRE PIPE SUPPORT.
- C. IF AN EXCAVATION CROSSES OR RUNS PARALLEL TO A GAS FACILITY, SUPPORTS MAY NOT BE REQUIRED IF THE EXPOSED SECTION OF PLASTIC PIPES IS 3' OR LESS AND STEEL PIPES 7' OR LESS.
- D. ALL EXCAVATIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE ONE CALL DIG SAFE PROGRAM USING THE APPROPRIATE MARK OUT, TEST HOLES AND EXCAVATION TO AVOID DAMAGE TO PIPE OR PIPE COATINGS:
 - NEW YORK STATE CODE RULE 753
 - MA CHAPTER 82 - SECTION 40, GENERAL LAWS, REGULATING NOTICE REQUIREMENTS FOR EXCAVATION IN PUBLIC WAYS
 - NH DIG SAFE LAW, RSA 374 – REGULATING UNDERGROUND UTILITY DAMAGE PREVENTION SYSTEM
- E. USE OF THIS CONSTRUCTION STANDARD DOES NOT RELIEVE THE CONSTRUCTION AGENCY OR AUTHORITY OR THEIR RESPECTIVE CONTRACTORS OF RESPONSIBILITY FOR DAMAGES. ALL DAMAGES WILL BE REPAIRED IN ACCORDANCE WITH EXISTING STANDARDS AND THE APPROPRIATE PARTY SHALL BE BILLED FOR ALL EXPENSES.
- F. GAS FACILITIES SHOULD NOT BE UNDERMINED WITHOUT ADEQUATE SUPPORT (DETAIL A). ALL SUPPORT LINES SHALL BE TENSIONED SO THAT NO DEFLECTION WILL OCCUR WHEN THE FACILITY IS UNDERMINED. THIS TENSION SHALL BE CHECKED AT THE START AND END OF EACH DAY AND ADJUSTED AS NECESSARY.
- G. WHERE A COUPLING, GAS SERVICE, CLAMP, VALVE, DRIP LINE OR OTHER APPURTENANCE EXISTS ON THE EXPOSED SECTION OF MAIN, AN ADDITIONAL SUPPORT SHALL BE INSTALLED AT THE LOCATION.
- H. WHEN SUPPORTING AN EXPOSED FACILITY, THE PIPE COATING SHALL BE PROTECTED WITH ROCK SHIELD (ITEM ID 00301097), OR OTHER LIKE MATERIAL CUT TO A MINIMUM WIDTH OF ½ THE SUPPORTED PIPE DIAMETER. SUPPORT LINES SHALL BE A MINIMUM OF ¾" POLYPROPYLENE OR BETTER.
- I. SUPPORTS FOR GAS TRANSMISSION FACILITIES SHALL BE REVIEWED WITH GAS ENGINEERING PRIOR TO INSTALLATION.
- J. THE MAXIMUM SPACING BETWEEN SUPPORTS FOR STEEL FACILITIES SHALL BE AS FOLLOWS:
 - 7' SPACING FOR ¾" AND 1 ¼" STEEL
 - 10' SPACING FOR 2" STEEL
 - 15' SPACING FOR 3" AND 4" STEEL
 - 20' SPACING FOR 6" AND LARGER STEEL
- K. THE MAXIMUM SPACING BETWEEN SUPPORTS FOR PLASTIC FACILITIES SHALL BE AS FOLLOWS :
 - 3' SPACING FOR 2" AND SMALLER PLASTIC
 - 6' SPACING FOR 4" AND LARGER PLASTIC
- L. VIBRATING MACHINES ARE ALLOWED OVER STEEL OR PLASTIC FACILITIES WITH 24" OR GREATER COVER. HAND HELD MECHANICAL TAMPERS ARE ACCEPTABLE OVER ANY FACILITY WITH 12" OR GREATER COVER.
- M. WHEN CONSTRUCTION ACTIVITY IS COMPLETED, CLEAN FILL SHALL BE COMPACTED AROUND AND UNDER THE GAS FACILITY BEFORE REMOVING SUPPORTS.
- N. SEE REGIONAL PBWK5010 PROCEDURES FOR **REPLACEMENT** REQUIREMENTS OF CAST IRON PIPE.

No.	ITEM	CODE No.
BILL OF MATERIAL		

**CODE 938.1000
PRICE ADJUSTMENTS**

DESCRIPTION:

a. Liquid Asphalt Cement.* The Base Price of Liquid Asphalt Cement as required to implement **Subsection 938.03.1** of the Standard Specifications is \$ 395.00 per ton.

* In the case of modified asphalt binder, this price adjustment provision shall only apply to the neat liquid asphalt component. This provision shall not apply to the modifier component, manufacture, storage, transportation or other associated costs.

b. Diesel Fuel. The Base Price of Diesel Fuel as required to implement **Subsection 938.03.2** of the Standard Specifications is \$ 1.2399 per gallon.

Current price adjustments can be found at the following web address:

<http://www.dot.ri.gov/business/contractorsandconsultants.php>

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201.0401	REMOVE AND DISPOSE GRANITE CURB	1
201.0403	REMOVE AND DISPOSE SIDEWALKS	2
201.0407	REMOVE AND DISPOSE PAVEMENT AND RIGID BASE	2
201.0409	REMOVE AND DISPOSE FLEXIBLE PAVEMENT	2
201.0412	REMOVE AND DISPOSE MANHOLE	2
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201.0419	REMOVE AND DISPOSE FENCE	3
201.9901	REMOVE AND DISPOSE LIGHT FOUNDATION	3
202.0100	EARTH EXCAVATION	3
203.0100	STRUCTURAL EXCAVATION EARTH	3
203.0600	FILL GRAVEL BORROW UNDER STRUCTURES	3
203.0700	PERVIOUS FILL	4
204.0100	TRIMMING AND FINE GRADING	4
206.0312	COMPOST FILTER SOCK 12 INCH DIAMETER	4
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501.9901	INTEGRALLY COLORED AND STAMPED PORTLAND CEMENT CONCRETE- COBBLESTONE PATTERN, 4-INCH DEPTH	6
603.1000	CONTROLLED LOW STRENGTH MATERIAL	6
701.5206	6 INCH DUCTILE IRON WATER PIPE CLASS 52, RESTRAINED JOINT	6
701.5208	8 INCH DUCTILE IRON WATER PIPE CLASS 52, RESTRAINED JOINT	6
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943.0200	TRAINEE MAN-HOURS	20
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L02.0101	GENERAL HIGHWAY SEEDING (TYPE 1)	20
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T20.2006	6 INCH EPOXY RESIN PAVEMENT MARKINGS WHITE	25
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Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
001	201.0301	CUTTING AND DISPOSING ISOLATED TREES AND STUMPS (4"- 24") ELMWOOD AVE AS DIRECTED BY THE ENGINEER	EACH			
		NORTHEAST CORNER		4.00	0011	01
		NORTHWEST CORNER		4.00	0011	01
		SOUTHEAST CORNER		4.00	0011	01
		SOUTHWEST CORNER		4.00	0011	01
Item 201.0301 Total:				20.00		
002	201.0304	PARTIAL REMOVAL OF STUMPS TO 6'' BELOW FINAL GROUND LEVEL ELMWOOD AVE	EACH			
		NORTHEAST CORNER		1.00	0011	01
		NORTHWEST CORNER		1.00	0011	01
		SOUTHEAST CORNER		1.00	0011	01
		SOUTHWEST CORNER		1.00	0011	01
Item 201.0304 Total:				4.00		
003	201.0321	CLEARING AND GRUBBING ELMWOOD AVE	SY			
		NORTHEAST CORNER		90.00	0011	01
		NORTHWEST CORNER		150.00	0011	01
		SOUTHEAST CORNER		90.00	0011	01
		SOUTHWEST CORNER		120.00	0011	01
Item 201.0321 Total:				450.00		
004	201.0401	REMOVE AND DISPOSE GRANITE CURB ELMWOOD AVENUE	LF			
		EAST SDWK		20.00	0011	01
		MEDIAN		40.00	0011	01
		WEST SDWK		20.00	0011	01
Item 201.0401 Total:				80.00		

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<u>Item No.</u>	<u>Item Code</u>	<u>Description</u>	<u>UM</u>	<u>Qty.</u>	<u>Pay Code</u>	<u>Seq. No.</u>
005	201.0403	REMOVE AND DISPOSE SIDEWALKS	SY			
		ELMWOOD AVENUE				
		MEDIAN REMOVAL FROM 46+50 TO 53+25 MINUS BRIDGE		220.00	0011	01
		SIDEWALK REMOVAL LT. FROM 48+89 TO 51+47 MINUS BRIDGE		205.00	0011	01
		SIDEWALK REMOVAL RT. FROM 49+40 TO 51+15 MINUS BRIDGE		115.00	0011	01
				Item 201.0403 Total:		540.00
006	201.0407	REMOVE AND DISPOSE PAVEMENT AND RIGID BASE	SY			
		ELMWOOD AVE				
		MEDIAN 46+50 TO 49+40		70.00	0011	01
		MEDIAN 51+15 TO 53+25		50.00	0011	01
		ROADWAY 49+40 TO 51+15 MINUS BRIDGE		900.00	0011	01
				Item 201.0407 Total:		1,020.00
007	201.0409	REMOVE AND DISPOSE FLEXIBLE PAVEMENT	SY			
		ELMWOOD AVENUE				
		TEMPORARY MEDIAN PAVEMENT		430.00	0011	01
				Item 201.0409 Total:		430.00
008	201.0412	REMOVE AND DISPOSE MANHOLE	EACH			
		ELMWOOD AVE				
		49+67 LT		1.00	0011	01
		50+57 LT		1.00	0011	01
				Item 201.0412 Total:		2.00
009	201.0414	REMOVE AND DISPOSE PIPE - ALL SIZES LF				
		ELMWOOD AVENUE				

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Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
009	201.0414 Cont.	ELECTRIC DUCT		310.00	0011	01
		GAS		220.00	0011	01
		SIGNAL		250.00	0011	01
		TELEPHONE DUCT		600.00	0011	01
		TEMP WATER		189.00	0011	01
		WATER		295.00	0011	01
Item 201.0414 Total:				1,864.00		
010	201.0419	REMOVE AND DISPOSE FENCE	LF			
		ELMWOOD AVE				
		NE CORNER		60.00	0011	01
		NW CORNER		80.00	0011	01
		SE CORNER		30.00	0011	01
		SW CORNER		130.00	0011	01
Item 201.0419 Total:				300.00		
011	201.9901	REMOVE AND DISPOSE LIGHT FOUNDATION EACH				
		ELMWOOD AVENUE				
		50+73, 33' LT		1.00	0011	01
Item 201.9901 Total:				1.00		
012	202.0100	EARTH EXCAVATION	CY			
		ELMWOOD AVE				
		48+89 TO 51+47		300.00	0011	01
Item 202.0100 Total:				300.00		
013	203.0100	STRUCTURAL EXCAVATION EARTH	CY			
		BRIDGE 131				
		ABUTMENTS		500.00	0011	01
Item 203.0100 Total:				500.00		
014	203.0600	FILL GRAVEL BORROW UNDER STRUCTURES	CY			
		BRIDGE 131				

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014	203.0600 Cont.	ABUTMENTS		70.00	0011	01
				Item 203.0600 Total:		
				70.00		
015	203.0700	PERVIOUS FILL	CY			
		BRIDGE 131				
		ABUTMENTS		110.00	0011	01
				Item 203.0700 Total:		
				110.00		
016	204.0100	TRIMMING AND FINE GRADING	SY			
		ELMWOOD AVE.				
		NORTH APPROACH		850.00	0011	01
		SOUTH APPROACH		750.00	0011	01
				Item 204.0100 Total:		
				1,600.00		
017	206.0312	COMPOST FILTER SOCK 12 INCH	LF			
		DIAMETER				
		ELMWOOD AVE				
		NE CORNER		50.00	0011	01
		NW CORNER		80.00	0011	01
		SE CORNER		150.00	0011	01
		SW CORNER		170.00	0011	01
				Item 206.0312 Total:		
				450.00		
018	212.2000	CLEANING AND MAINTENANCE OF	LS			
		EROSION CONTROLS				
		ELMWOOD AVE				
		AS DIRECTED BY THE ENGINEER		1.00	0011	01
				Item 212.2000 Total:		
				1.00		
019	213.0100	PLACEMENT OF MILLINGS BENEATH	LF			
		GUARDRAIL				
		ELMWOOD AVE				
		NE CORNER		32.00	0011	01

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Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
019	213.0100	Cont.				
		NW CORNER		45.00	0011	01
		SE CORNER		44.00	0011	01
		SW CORNER		31.00	0011	01
Item 213.0100 Total:				152.00		
020	302.0100	GRAVEL BORROW SUBBASE COURSE	CY			
		ELMWOOD AVENUE				
		MEDIAN RESTORATION		40.00	0011	01
		UNDER MEDIAN		170.00	0011	01
		UNDER SIDEWALKS		55.00	0011	01
Item 302.0100 Total:				265.00		
021	401.1000	CLASS 19.0 HMA	TON			
		ELMWOOD AVE.				
		49+40-51+15 MINUS BRIDGE		230.00	0011	01
Item 401.1000 Total:				230.00		
022	401.2000	CLASS 12.5 HMA	TON			
		ELMWOOD AVE				
		STA. 46+50 TO 53+67 MINUS BRIDGE		576.00	0011	01
Item 401.2000 Total:				576.00		
023	401.4000	CLASS 4.75 HMA	TON			
		ELMWOOD AVE				
		AS DIRECTED BY THE ENGINEER		5.00	0011	01
		MEDIAN CURB FROM 46+50 TO 53+25 MINUS BRIDGE		20.00	0011	01
		NE SDWK CURB FROM 48+89 TO 49+40 LT		1.00	0011	01
		PAVE MEDIAN FROM 46+50 TO 53+25		110.00	0011	01
		SE SDWK CURB FROM 51+15 TO		1.00	0011	01

Distribution of Quantities

Project Name - Harbor Junction Br. #131

Estimate Name - Addendum 2

R.I. Contract No. - 2015-CB-045

FAP Nos: BRO-0131-001

Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
023	401.4000	Cont. 51+47 LT				
				Item 401.4000 Total:		137.00
024	403.0300	ASPHALT EMULSION TACK COAT	SY			
		ELMWOOD AVE				
		46+50 TO 53+60		4,400.00	0011	01
		49+40 TO 51+15		800.00	0011	01
				Item 403.0300 Total:		5,200.00
025	501.9901	INTEGRALLY COLORED AND STAMPED	SF			
		PORLAND CEMENT				
		CONCRETE-COBBLESTONE PATTERN,				
		4-INCH DEPTH				
		ELMWOOD AVE				
		STA 46+50 TO 53+27 MEDIAN		1,850.00	0011	01
		MINUS BRIDGE				
				Item 501.9901 Total:		1,850.00
026	603.1000	CONTROLLED LOW STRENGTH MATERIAL	CY			
		ELMWOOD AVE				
		UNDER APPROACH SIDEWALKS		35.00	0011	01
		ADJACENT TO BRIDGE				
				Item 603.1000 Total:		35.00
027	701.5206	6 INCH DUCTILE IRON WATER PIPE	LF			
		CLASS 52, RESTRAINED JOINT				
		ZOO SERVICE				
		PERM		14.00	0011	01
		TEMP		14.00	0011	01
				Item 701.5206 Total:		28.00
028	701.5208	8 INCH DUCTILE IRON WATER PIPE	LF			
		CLASS 52, RESTRAINED JOINT				

Distribution of Quantities

Project Name - Harbor Junction Br. #131

Estimate Name - Addendum 2

R.I. Contract No. - 2015-CB-045

FAP Nos: BRO-0131-001

Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
028	701.5208 Cont.	ELMWOOD AVE				
		PERM		300.00	0011	01
		TEMP		200.00	0011	01
Item 701.5208 Total:				500.00		
029	701.8100	FURNISH AND INSTALL DUCTILE IRON	LBS			
		FITTINGS				
		WATER LINE				
		PERM		1,700.00	0011	01
		TEMP		1,400.00	0011	01
Item 701.8100 Total:				3,100.00		
030	701.8108	8 INCH GATE VALVE AND BOX	EACH			
		WATER LINE				
		PERM		2.00	0011	01
Item 701.8108 Total:				2.00		
031	701.8160	BLOW OFF ASSEMBLY	EACH			
		WATER LINE				
		PERM		1.00	0011	01
		TEMP		1.00	0011	01
Item 701.8160 Total:				2.00		
032	701.9001	CONDUCT LEAKAGE TEST	EACH			
		WATER LINE				
		PERM		1.00	0011	01
		TEMP		1.00	0011	01
Item 701.9001 Total:				2.00		
033	701.9002	STERILIZATION OF WATER MAINS	LS			
		WATER LINE				
		TEMP AND PERM		1.00	0011	01
Item 701.9002 Total:				1.00		

Distribution of Quantities

Project Name - Harbor Junction Br. #131

Estimate Name - Addendum 2

R.I. Contract No. - 2015-CB-045

FAP Nos: BRO-0131-001

Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
034	701.9901	TRANSITION COUPLING	EACH			
		WATER LINE				
		6"		1.00	0011	01
		8"		2.00	0011	01
Item 701.9901 Total:				3.00		
035	701.9902	8" PIPE INSULATION	LF			
		WATER LINE				
		PERM		90.00	0011	01
		TEMP		90.00	0011	01
Item 701.9902 Total:				180.00		
036	702.9910	INSTALL 6" POLYETHYLENE GAS MAIN AND FITTINGS ON APPROACHES	LF			
		ELMWOOD AVE.				
		ON BRIDGE APPROACHES		666.00	0011	01
Item 702.9910 Total:				666.00		
037	702.9912	INSTALL 6" STEEL GAS MAIN AND FITTINGS ON BRIDGE	LF			
		ELMWOOD AVE.				
		ON BRIDGE		80.00	0011	01
Item 702.9912 Total:				80.00		
038	702.9920	6" PVC ELECTRIC DUCTS IN APPROACHES	LF			
		ELMWOOD AVE.				
		ON BRIDGE APPROACH		96.00	0011	01
Item 702.9920 Total:				96.00		
039	702.9921	6" FIBERGLASS ELECTRIC DUCTS ON BRIDGE	LF			
		ELMWOOD AVE.				
		ON BRIDGE		75.00	0011	01

Distribution of Quantities

Project Name - Harbor Junction Br. #131
 Estimate Name - Addendum 2
 R.I. Contract No. - 2015-CB-045
 FAP Nos: BRO-0131-001

Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
039	702.9921	Cont.		Item 702.9921 Total:		75.00
040	707.0955	ADJUST ELECTRICAL MANHOLE TO GRADE	EACH			
		ELMWOOD AVE				
		49+60 RT		1.00	0011	01
		51+40 RT		1.00	0011	01
		Item 707.0955 Total:				2.00
041	708.9040	CLEANING AND FLUSHING PIPE ALL SIZES	LF			
		ELMWOOD AVE				
		STA. 48+00 LT		21.00	0011	01
		STA. 48+00 RT		32.00	0011	01
		STA. 53+00 LT		40.00	0011	01
		STA. 53+50 RT		77.00	0011	01
		Item 708.9040 Total:				170.00
042	708.9041	CLEANING CATCH BASINS ALL TYPES AND SIZES	EACH			
		ELMWOOD AVE				
		STA. 48+00 LT & RT		2.00	0011	01
		STA. 52+80 LT		1.00	0011	01
		STA. 53+40 RT		1.00	0011	01
		Item 708.9041 Total:				4.00
043	708.9042	CLEANING MANHOLES ALL TYPES AND SIZES	EACH			
		ELMWOOD AVE				
		46+95 LT		1.00	0011	01
		47+98 LT		1.00	0011	01
		Item 708.9042 Total:				2.00
044	709.8103	FURNISH & INSTALL CEMENT CONCRETE	CY			

Distribution of Quantities

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Estimate Name - Addendum 2

R.I. Contract No. - 2015-CB-045

FAP Nos: BRO-0131-001

Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
044	709.8103	Cont. CLASS B THRUST & ANCHOR BLOCKS				
		CAST-IN-PLACE				
		ELMWOOD AVE				
		WATERLINE		5.00	0011	01
		Item 709.8103 Total:		5.00		
045	800.9910	HARBOR JUNCTION BRIDGE NO. 131	LS			
		BRIDGE 131				
		BRIDGE 131		1.00	0011	01
		Item 800.9910 Total:		1.00		
046	802.9901	TEMPORARY UTILITY SUPPORT	LS			
		STRUCTURES				
		BRIDGE 131				
		WEST SIDE OF ROAD		1.00	0011	01
		Item 802.9901 Total:		1.00		
047	803.0100	REMOVE AND DISPOSE EXISTING	LS			
		SUPERSTRUCTURE				
		BRIDGE 131				
		BRIDGE 131		1.00	0011	01
		Item 803.0100 Total:		1.00		
048	803.0300	PARTIAL REMOVAL AND DISPOSAL OF	CY			
		EXISTING CONCRETE MASONRY				
		BRIDGE 131				
		NORTH AND SOUTH ABUTMENTS		90.00	0011	01
		Item 803.0300 Total:		90.00		
049	803.9901	REMOVE AND DISPOSE STONE MASONRY	CY			
		BRIDGE 131				
		NORTH AND SOUTH ABUTMENT		60.00	0011	01
		Item 803.9901 Total:		60.00		

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R.I. Contract No. - 2015-CB-045

FAP Nos: BRO-0131-001

Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
050	804.9911	MOBILIZATION AND DEMOBILIZATION OF MICROPILE EQUIPMENT	LS			
		BRIDGE 131				
		BRIDGE 131		1.00	0011	01
Item 804.9911 Total:				1.00		
051	804.9912	DRILLED MICROPILES	EACH			
		BRIDGE 131				
		NORTH AND SOUTH ABUTMENT		28.00	0011	01
Item 804.9912 Total:				28.00		
052	804.9913	MICROPILE LOAD TEST	EACH			
		BRIDGE 131				
		NORTH ABUTMENT		1.00	0011	01
		SOUTH ABUTMENT		1.00	0011	01
Item 804.9913 Total:				2.00		
053	807.0350	POINTING & GROUTING MASONRY	LF			
		BRIDGE 131				
		BOTH ABUTMENTS AS DIRECTED BY THE ENGINEER		160.00	0011	01
Item 807.0350 Total:				160.00		
054	817.2110	REPAIRS TO STRUCTURAL CONCRETE MASONRY (PATCHING MORTAR)	CF			
		BRIDGE 131				
		NW & NE WINGWALL		23.00	0011	01
		SW & SE WINGWALL		25.00	0011	01
Item 817.2110 Total:				48.00		
055	819.0800	DRILL AND GROUT REINFORCING DOWELS	EACH			
		BRIDGE 131				
		BRIDGE 131		310.00	0011	01

Distribution of Quantities

Project Name - Harbor Junction Br. #131

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R.I. Contract No. - 2015-CB-045

FAP Nos: BRO-0131-001

Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
055	819.0800	Cont.				
Item 819.0800 Total:				310.00		
S056	901.0151	TERMINAL END SECTION SINGLE FACE STANDARD 34.3.2 ELMWOOD AVE	EACH			
		NE CORNER		1.00	0011	01
		NW CORNER		1.00	0011	01
		SE CORNER		1.00	0011	01
		SW CORNER		1.00	0011	01
Item 901.0151 Total:				4.00		
S057	901.9901	STEEL BEAM BRIDGE CONNECTION APPROCH END (W/ NESTED RAIL) ELMWOOD AVE	EACH			
		NW ENDPOST		1.00	0011	01
		SE ENDPOST		1.00	0011	01
Item 901.9901 Total:				2.00		
S058	901.9902	STEEL BEAM BRIDGE CONNECTION TRAILING END (W/O NESTED RAIL) ELMWOOD AVE	EACH			
		NE ENDPOST		1.00	0011	01
		SW ENDPOST		1.00	0011	01
Item 901.9902 Total:				2.00		
059	903.0206	CHAIN LINK FENCE 6' STD 31.2.0 ELMWOOD AVE	LF			
		NE CORNER		40.00	0011	01
		NW CORNER		40.00	0011	01
		SE CORNER		18.00	0011	01
		SW CORNER		50.00	0011	01
Item 903.0206 Total:				148.00		

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R.I. Contract No. - 2015-CB-045

FAP Nos: BRO-0131-001

Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
060	903.9901	TEMPORARY CHAIN LINK FENCE ON BARRIER ELMWOOD AVE. STAGE 1 STAGE 2	LF			
				470.00	0011	01
				620.00	0011	01
		Item 903.9901 Total:		1,090.00		
061	903.9902	REMOVE AND RESET CAST IRON FENCE ELMWOOD AVENUE 50+51-51+15, 41' LT	LF			
				66.00	0011	01
		Item 903.9902 Total:		66.00		
062	905.0110	PORTLAND CEMENT SIDEWALK MONOLITHIC STANDARD 43.1.0 ELMWOOD AVE EAST SIDE WEST SIDE	CY			
				20.00	0011	01
				15.00	0011	01
		Item 905.0110 Total:		35.00		
063	905.0115	PORTLAND CEMENT CONCRETE DRIVEWAY STANDARD 43.5.0 ELMWOOD AVE 49+55 RT	CY			
				7.00	0011	01
		Item 905.0115 Total:		7.00		
064	906.0100	SLOPE FACED GRANITE CURB - QUARRY SPLIT STRAIGHT STANDARD 7.4.0 ELMWOOD AVE 10% OF 906.0700 MEDIAN	LF			
				130.00	0011	01
		Item 906.0100 Total:		130.00		
065	906.0110	GRANITE CURB, QUARRY SPLIT STRAIGHT, STANDARD 7.3.0	LF			

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R.I. Contract No. - 2015-CB-045

FAP Nos: BRO-0131-001

Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
065	906.0110	Cont. ELMWOOD AVE				
		10% OF 906.0700 SIDEWALKS		40.00	0011	01
				Item 906.0110 Total:		40.00
066	906.0118	6' GRANITE TRANSITION CURB, QUARRY EACH SPLIT SPECIAL TRANSITION STANDARD 7.3.2 ELMWOOD AVE				
		49+50 RT DRIVEWAY		1.00	0011	01
		49+70 RT DRIVEWAY		1.00	0011	01
				Item 906.0118 Total:		2.00
067	906.0700	REMOVE, HANDLE, HAUL TRIM RESET CURB EDGING, STRAIGHT, CIRCULAR ALL TYPES ELMWOOD AVENUE	LF			
		EAST SIDEWALK		220.00	0011	01
		MEDIAN		1,300.00	0011	01
		WEST SIDEWALK		140.00	0011	01
				Item 906.0700 Total:		1,660.00
068	907.0100	WATER FOR DUST CONTROL ELMWOOD AVE	MGAL			
		PROJECT WIDE		5.00	0011	01
				Item 907.0100 Total:		5.00
069	907.0200	CALCIUM CHLORIDE FOR DUST CONTROL (PROJECT WIDE) ELMWOOD AVE	TON			
		PROJECT WIDE		3.00	0011	01
				Item 907.0200 Total:		3.00
070	914.5010	FLAGPERSONS	MHRS			

Distribution of Quantities

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R.I. Contract No. - 2015-CB-045

FAP Nos: BRO-0131-001

Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
070	914.5010 Cont.	ELMWOOD AVENUE				
		FINAL ACTIVITIES		160.00	0011	01
		PRE-STAGE 1 ACTIVITIES		160.00	0011	01
		STAGE 1		1,280.00	0011	01
		STAGE 2		1,280.00	0011	01
Item 914.5010 Total:				2,880.00		
071	914.5020	FLAGPERSONS - OVERTIME	MHRS			
		PROJECT WIDE				
		FROM ITEM 914.5010 (~10%)		290.00	0011	01
Item 914.5020 Total:				290.00		
072	915.0240	REMOVE AND RESET HIGHWAY BOUNDS	EACH			
		(ALL TYPES)				
		ELMWOOD AVE				
		49+47.38, 39.98' L		1.00	0011	01
		49+47.38,				
		39.98' LT				
		50+06.39, 40.03' RT		1.00	0011	01
Item 915.0240 Total:				2.00		
073	919.0101	TEST PITS	EACH			
		ELMWOOD AVE				
		STA 46+50 TO 53+00		20.00	0011	01
Item 919.0101 Total:				20.00		
074	920.0070	DUMPED STONE RIPRAP R-3, R-4, 4-5	CY			
		STANDARD 8.3.0				
		ELMWOOD AVE				
		NE EMBANKMENT		23.00	0011	01
		SW EMBANKMENT		27.00	0011	01
Item 920.0070 Total:				50.00		

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FAP Nos: BRO-0131-001

Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
075	920.0135	BEDDING FOR RIPRAP FS-2 STANDARD	SY			
		8.3.0				
		ELMWOOD AVE				
		NE EMBANKMENT		23.00	0011	01
		SW EMBANKMENT		27.00	0011	01
Item 920.0135 Total:				50.00		
076	920.0200	FILTER FABRIC FOR RIP-RAP	SY			
		ELMWOOD AVE				
		NE EMBANKMENT		23.00	0011	01
		SW EMBANKMENT		27.00	0011	01
Item 920.0200 Total:				50.00		
077	922.0100	TEMPORARY CONSTRUCTION SIGNS	SF			
		STANDARD 29.1.0 AND 27.1.1				
		ELMWOOD AVENUE				
		AS DIRECTED BY THE ENGINEER		183.50	0011	01
		G20-2		9.00	0011	01
		R3-7R		12.50	0011	01
		R4-7		10.00	0011	01
		R9-10		4.00	0011	01
		R9-11A		4.00	0011	01
		R9-9		4.00	0011	01
		RI STD 27.1.1		12.00	0011	01
		W11-2		36.00	0011	01
		W16-7P		4.00	0011	01
		W16-9P		4.00	0011	01
		W20-1		45.00	0011	01
		W20-5L		9.00	0011	01
		W20-5R		9.00	0011	01
		W24-1L		9.00	0011	01
		W4-2L		9.00	0011	01
		W4-2R		9.00	0011	01

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FAP Nos: BRO-0131-001

<u>Item No.</u>	<u>Item Code</u>	<u>Description</u>	<u>UM</u>	<u>Qty.</u>	<u>Pay Code</u>	<u>Seq. No.</u>
077	922.0100	Cont.				
		W6-3		18.00	0011	01
		W9-2		9.00	0011	01
Item 922.0100 Total:				400.00		
078	923.0105	DRUM BARRICADE STANDARD 26.2.0	BDAY			
		BRIDGE NO. 131				
		FINAL ACTIVITIES		300.00	0011	01
		PRE-STAGE 1 ACTIVITIES		300.00	0011	01
		STAGE 1		18,000.00	0011	01
		STAGE 2		18,000.00	0011	01
		PROJECT WIDE				
		AS DIRECTED BY THE ENGINEER		1,400.00	0011	01
Item 923.0105 Total:				38,000.00		
079	923.0120	PLASTIC PIPE BARRICADE STANDARD	EACH			
		26.3.0				
		ELMWOOD AVE				
		MISCELLANEOUS USE		6.00	0011	01
		SIDEWALK CLOSURES		4.00	0011	01
Item 923.0120 Total:				10.00		
080	923.0200	FLUORESCENT TRAFFIC CONES STANDARD	EACH			
		26.1.0				
		ELMWOOD AVENUE				
		AS DIRECTED BY THE ENGINEER		50.00	0011	01
		SHORT TERM SETUPS		100.00	0011	01
Item 923.0200 Total:				150.00		
081	924.0113	ADVANCE WARNING ARROW PANEL	PDAY			
		ELMWOOD AVE				
		AS DIRECTED BY THE ENGINEER		100.00	0011	01
		FINAL ACTIVITIES		20.00	0011	01
		PRE-STAGE 1 ACTIVITIES		20.00	0011	01

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FAP Nos: BRO-0131-001

Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
081	924.0113	Cont.				
		STAGE 1		480.00	0011	01
		STAGE 2		480.00	0011	01
Item 924.0113 Total:				1,100.00		
082	925.0112	PORTABLE CHANGEABLE MESSAGE SIGN	PDAY			
		ELMWOOD AVE				
		AS DIRECTED BY THE ENGINEER		1,200.00	0011	01
Item 925.0112 Total:				1,200.00		
083	926.0110	ANCHORED SINGLE-FACE PRECAST	LF			
		CONCRETE BARRIER FOR TEMPORARY				
		TRAFFIC CONTROL				
		ELMWOOD AVE				
		(STAGE 1) CENTERED ON BRIDGE		90.00	0011	01
		(STAGE 2) CENTERED ON BRIDGE		90.00	0011	01
Item 926.0110 Total:				180.00		
084	926.0121	UNANCHORED PRECAST CONCRETE	LF			
		BARRIER FOR TEMPORARY TRAFFIC				
		CONTROL STANDARD 40.5.0				
		ELMWOOD AVE				
		STAGE 1		380.00	0011	01
		STAGE 2		550.00	0011	01
Item 926.0121 Total:				930.00		
085	928.0800	TRUCK MOUNTED ATTENUATOR WITH	PDAY			
		TRUCK MOUNTED FLASHING ARROW BOARD				
		PROJECT WIDE				
		AS DIRECTED BY THE ENGINEER		20.00	0011	01
Item 928.0800 Total:				20.00		
086	929.0110	FIELD OFFICE	PMO			
		ELMWOOD AVE				

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R.I. Contract No. - 2015-CB-045

FAP Nos: BRO-0131-001

<u>Item No.</u>	<u>Item Code</u>	<u>Description</u>	<u>UM</u>	<u>Qty.</u>	<u>Pay Code</u>	<u>Seq. No.</u>
086	929.0110 Cont.	PROJECT WIDE		30.00	0011	01
				Item 929.0110 Total:	30.00	
087	931.0110	CLEANING AND SWEEPING PAVEMENT	HSY			
		ELMWOOD AVE				
		46+50-53+60		120.00	0011	01
				Item 931.0110 Total:	120.00	
088	932.0100	CUTTING AND MATCHING ASPHALT	LF			
		ELMWOOD AVE				
		46+50		64.00	0011	01
		52+20 RT		24.00	0011	01
		53+20 LT		15.00	0011	01
		53+67		92.00	0011	01
				Item 932.0100 Total:	195.00	
089	932.0210	FULL DEPTH SAWCUT OF BITUMINOUS	LF			
		PAVEMENT AND RIGID BASE				
		ELMWOOD AVE				
		MEDIAN STA 46+50-53+25		1,270.00	0011	01
		STA. 46+50		60.00	0011	01
		STA. 53+27		85.00	0011	01
				Item 932.0210 Total:	1,415.00	
090	932.0230	FULL DEPTH SAWCUT OF PORTLAND	LF			
		CEMENT CONCRETE SIDEWALK/DRIVEWAY				
		ELMWOOD AVE				
		48+89 LT		8.00	0011	01
		49+40 RT		8.00	0011	01
		51+15 RT		8.00	0011	01
		51+47 LT		9.00	0011	01
				Item 932.0230 Total:	33.00	

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FAP Nos: BRO-0131-001

Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
091	935.0400	REMOVING BITUMINOUS PAVEMENT BY MICRO MILLING ELMWOOD AVE	SY			
		46+50-49+40		2,000.00	0011	01
		51+15-53+67		1,825.00	0011	01
Item 935.0400 Total:				3,825.00		
092	936.0100	MOBILIZATION AND DEMOBILIZATION ELMWOOD AVE	LS			
		PROJECT WIDE		1.00	0011	01
Item 936.0100 Total:				1.00		
093	937.0200	MAINTENANCE AND MOVEMENT TRAFFIC PROTECTION PROJECT WIDE	LS			
		AS DIRECTED BY THE ENGINEER		1.00	0011	01
Item 937.0200 Total:				1.00		
094	943.0200	TRAINEE MAN-HOURS PROJECT WIDE	MHRS			
		AS DIRECTED BY THE ENGINEER		4,000.00	0011	01
Item 943.0200 Total:				4,000.00		
095	L01.0104	PLANTABLE SOIL 4 INCHES DEEP ELMWOOD AVE	SY			
		NORTH EMBANKMENT		112.00	0011	01
		SOUTH EMBANKMENT		108.00	0011	01
Item L01.0104 Total:				220.00		
S096	L02.0101	GENERAL HIGHWAY SEEDING (TYPE 1) ELMWOOD AVE	SY			
		NORTH EMBANKMENT		112.00	0011	01
		SOUTH EMBANKMENT		108.00	0011	01

Distribution of Quantities

Project Name - Harbor Junction Br. #131

Estimate Name - Addendum 2

R.I. Contract No. - 2015-CB-045

FAP Nos: BRO-0131-001

Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
S096	L02.0101	Cont.				
				Item L02.0101 Total:		220.00
097	L11.0102	TREE PLANT PROTECTION DEVICE STANDARD 51.1.0 ELMWOOD AVE 51+00 LT	EACH	1.00	0011	01
				Item L11.0102 Total:		1.00
S098	T04.9902	EXISTING 36 STRAND SINGLE MODE FIBER OPTIC CABLE CUT, PULL & SPlice ELMWOOD AVE. FIBER OPTIC CABLE	LS	1.00	0011	01
				Item T04.9902 Total:		1.00
099	T04.9910	23 AWG CAT6 STP NETWORK VIDEO CABLE LF ELMWOOD AVE. 45+50-46+37, 87'LT		275.00	0011	01
				Item T04.9910 Total:		275.00
S100	T05.9901	BREAK INTO EXISTING HANDHOLE ELMWOOD AVE. 48+95, 35' LT 51+45, 35' LT	EACH	1.00	0011	01
				Item T05.9901 Total:		2.00
S101	T06.5140	4 INCH SCHEDULE 40 POLYVINYL CHLORIDE PLASTIC CONDUIT - UNDERGROUND ELMWOOD AVENUE FIRE ALARM STATION 50+64-51+15 LT	LF	65.00	0011	01
				Item T06.5140 Total:		65.00

Distribution of Quantities

Project Name - Harbor Junction Br. #131

Estimate Name - Addendum 2

R.I. Contract No. - 2015-CB-045

FAP Nos: BRO-0131-001

Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
S102	T06.5340	4 INCH SCHEDULE 40 POLYVINYL CHLORIDE PLASTIC CONDUIT - UNDER EXISTING PAVEMENT ELMWOOD AVENUE FIRE ALARM STATION 51+15-53+43 LT	LF	228.00	0011	01
Item T06.5340 Total:				228.00		
S103	T06.9901	4 INCH RIGID STEEL SIGNAL CONDUIT ON APPROACHES ELMWOOD AVE. APPROACHES	LF	230.00	0011	01
Item T06.9901 Total:				230.00		
S104	T06.9902	4 INCH FIBERGLASS SIGNAL CONDUIT ON BRIDGE ELMWOOD AVE. BRIDGE	LF	215.00	0011	01
Item T06.9902 Total:				215.00		
105	T06.9910	FIRE ALARM PEDESTAL AND APPURTENANCES ELMWOOD AVENUE 50+63, 42' LT	LS	1.00	0011	01
Item T06.9910 Total:				1.00		
106	T08.0100	LIGHT STANDARD FOUNDATION WITH ANCHOR BOLTS STANDARD 18.1.0 ELMWOOD AVENUE 50+73, 33' LT	EACH	1.00	0011	01
Item T08.0100 Total:				1.00		
107	T08.1700	REMOVE AND RELOCATE LIGHT STANDARD	EACH			

Distribution of Quantities

Project Name - Harbor Junction Br. #131

Estimate Name - Addendum 2

R.I. Contract No. - 2015-CB-045

FAP Nos: BRO-0131-001

Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
107	T08.1700 Cont.	ELMWOOD AVENUE 50+73, 33' LT		1.00	0011	01
Item T08.1700 Total:				1.00		
S108	T12.9901	MODIFICATIONS TO TRAFFIC SIGNAL EQUIPMENT ELMWOOD AVENUE AT ROGER WILLIAMS AVE/I-95 RAMPS	LS			
				1.00	0011	01
Item T12.9901 Total:				1.00		
109	T12.9910	REMOVE EXISTING CLD AND FI NEW IP CLD ON EXIST POLE ELMWOOD AVE. 46+37, 94'LT	EACH			
				1.00	0011	01
Item T12.9910 Total:				1.00		
110	T12.9911	REFURBISH CCTV CONTROLLER CABINET ELMWOOD AVE. 46+50, 77' LT	LS			
				1.00	0011	01
Item T12.9911 Total:				1.00		
111	T12.9912	POWER CONDITIONER ELMWOOD AVE. 46+50, 77' LT	EACH			
				1.00	0011	01
Item T12.9912 Total:				1.00		
S112	T13.1000	TRAFFIC DETECTORS-LOOP, STANDARD 19.6.0 ELMWOOD AVE/ENTRANCE TO ROGER WILLIAMS PARK SB APPROACH	LF			
				216.00	0011	01
Item T13.1000 Total:				216.00		

Distribution of Quantities

Project Name - Harbor Junction Br. #131

Estimate Name - Addendum 2

R.I. Contract No. - 2015-CB-045

FAP Nos: BRO-0131-001

Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
S113	T15.0100	DIRECTIONAL REGULATORY AND WARNING SIGNS	SF			
		ELMWOOD AVENUE				
		R3-2		16.00	0011	01
		R4-7		20.00	0011	01
		R7-1		6.00	0011	01
				Item T15.0100 Total:		42.00
S114	T20.0006	6 INCH WHITE FAST - DRYING WATERBORNE PAVEMENT MARKING PAINT	LF			
		ELMWOOD AVENUE				
		2ND APPLICATION - STAGE 1		1,920.00	0011	01
		2ND APPLICATION - STAGE 2		1,840.00	0011	01
		AS DIRECTD BY THE ENGINEER		2,000.00	0011	01
		MILLED SURFACE		2,000.00	0011	01
		STAGE 1		1,920.00	0011	01
		STAGE 2		1,840.00	0011	01
				Item T20.0006 Total:		11,520.00
S115	T20.0012	12 INCH WHITE FAST - DRYING WATERBORNE PAVEMENT MARKING PAINT	LF			
		ELMWOOD AVENUE				
		2ND APPLICATION - STAGE 1		41.00	0011	01
		2ND APPLICATION - STAGE 2		12.00	0011	01
		AS DIRECTED BY THE ENGINEER		60.00	0011	01
		MILLED SURFACE		60.00	0011	01
		STAGE 1		41.00	0011	01
		STAGE 2		12.00	0011	01
				Item T20.0012 Total:		226.00
S116	T20.0104	4 INCH YELLOW FAST - DRYING WATERBORNE PAVEMENT MARKING PAINT	LF			
		ELMWOOD AVENUE				

Distribution of Quantities

Project Name - Harbor Junction Br. #131

Estimate Name - Addendum 2

R.I. Contract No. - 2015-CB-045

FAP Nos: BRO-0131-001

Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
S116	T20.0104 Cont.	2ND APPLICATION - STAGE 1		2,265.00	0011	01
		2ND APPLICATION - STAGE 2		1,940.00	0011	01
		AS DIRECTED BY THE ENGINEER		2,000.00	0011	01
		MILLED SURFACE		1,720.00	0011	01
		STAGE 1		2,265.00	0011	01
		STAGE 2		1,940.00	0011	01
Item T20.0104 Total:				12,130.00		
S117	T20.1000	REMOVE EXISTING PAVEMENT MARKINGS	LF			
		ELMWOOD AVE				
		STA 46+50 TO 53+00		7,000.00	0011	01
Item T20.1000 Total:				7,000.00		
S118	T20.1106	6 INCH TEMPORARY WATERBORNE PAINT	LF			
		PAVEMENT MARKINGS WHITE				
		ELMWOOD AVENUE				
		FINAL SURFACE COURSE		2,125.00	0011	01
Item T20.1106 Total:				2,125.00		
S119	T20.1112	12 INCH TEMPORARY WATERBORNE PAINT	LF			
		PAVEMENT MARKINGS WHITE				
		ELMWOOD AVENUE				
		FINAL SURFACE COURSE		58.00	0011	01
Item T20.1112 Total:				58.00		
S120	T20.1204	4 INCH TEMPORARY WATERBORNE PAINT	LF			
		PAVEMENT MARKINGS YELLOW				
		ELMWOOD AVENUE				
		FINAL SURFACE COURSE		1,700.00	0011	01
Item T20.1204 Total:				1,700.00		
S121	T20.2006	6 INCH EPOXY RESIN PAVEMENT	LF			
		MARKINGS WHITE				

Distribution of Quantities

Project Name - Harbor Junction Br. #131

Estimate Name - Addendum 2

R.I. Contract No. - 2015-CB-045

FAP Nos: BRO-0131-001

<u>Item No.</u>	<u>Item Code</u>	<u>Description</u>	<u>UM</u>	<u>Qty.</u>	<u>Pay Code</u>	<u>Seq. No.</u>
S121	T20.2006 Cont.	ELMWOOD AVENUE				
		FINAL SURFACE COURSE		2,125.00	0011	01
				Item T20.2006 Total:	2,125.00	
S122	T20.2012	12 INCH EPOXY RESIN PAVEMENT	LF			
		MARKINGS WHITE				
		ELMWOOD AVENUE				
		FINAL SURFACE COURSE		58.00	0011	01
				Item T20.2012 Total:	58.00	
S123	T20.2014	4 INCH EPOXY RESIN PAVEMENT	LF			
		MARKINGS YELLOW				
		ELMWOOD AVENUE				
		FINAL SURFACE COURSE		1,700.00	0011	01
				Item T20.2014 Total:	1,700.00	



-  COMPOST FILTER SOCK
-  CUT AND MATCH ASPHALT
-  REMOVE AND DISPOSE MEDIAN
-  REMOVE AND DISPOSE LIGHT FOUNDATION
-  ELECTRIC HANDHOLE
-  FIBER OPTIC HANDHOLE
-  FIBER OPTIC MANHOLE
-  MODIFY ELECTRIC MANHOLE, SEE ELECTRIC PLANS
-  MICROMILL
-  REMOVE AND RESET CAST IRON FENCE, SEE DETAILS
-  REMOVE AND RESET HIGHWAY BOUND
-  REMOVE AND RELOCATE LIGHT STANDARD
-  STEEL BEAM BRIDGE CONNECTION APPROACH END (w/ NESTED RAIL)
-  STEEL BEAM BRIDGE CONNECTION TRAILING END (w/out NESTED RAIL)
-  STAMPED COLORED CONCRETE

2. GAS MAIN INSTALL TO BE BY BRIDGE CONTRACTORS NATIONAL GRID APPROVED GAS SUB CONTRACTOR LIST PROVIDED.
3. NATIONAL GRID CREW WILL DO ALL LIVE GAS TIE-INS AND ABANDONMENTS.
4. BRIDGE CONTRACTOR WILL BE RESPONSIBLE TO INSTALL SLEEVES IN BACKWALLS AND GAS UTILITY SUPPORTS.
5. CONSTRUCTION IS RESTRICTED ON OR NEAR THIS GAS FACILITY FROM NOVEMBER 1ST TO MARCH 31ST. ANY WORK ON OR WITHIN 7 FEET FROM THE GAS FACILITY WITHIN THIS TIME FRAME WILL REQUIRE WRITTEN APPROVAL FROM NATIONAL GRID. NO EXTRA PAYMENT OR TIME EXTENSION WILL BE GRANTED FOR ADHERENCE TO THIS REQUIREMENT, REGARDLESS OR WHETHER APPROVAL FROM NATIONAL GRID IS GRANTED OR NOT.
6. ITEM 201.0414, REMOVE AND DISPOSE PIPE, INCLUDES REMOVING TELEPHONE AND ELECTRIC DUCT BANKS. MEASUREMENT WILL BE LINEAR FEET OF ENTIRE DUCT BANK, NOT INDIVIDUAL DUCTS.
7. AS BUILT DRAWINGS SHALL BE PROVIDED FOR ALL UTILITY WORK. ALL HORIZONTAL AND VERTICAL LOCATIONS, INCLUDING MATERIALS, PIPE LENGTHS, BEND AND/OR FITTING STATION AND OFFSET. PLAN AND PROFILE OF EACH UTILITY SHALL BE PROVIDED. COST OF AS BUILT DRAWINGS SHALL BE INCLUDED IN COST OF UTILITY WORK.
8. STOCKPILE AREAS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
9. COST OF ALL UTILITIES SHALL INCLUDE ALL SAWCUTTING AND REMOVAL AND DISPOSING OF PAVEMENT AND/OR CONCRETE SIDEWALK, ALL EXCAVATION AND BACKFILL, AND RESTORING PAVEMENT TO ORIGINAL THICKNESS WITH CLASS 4.75 HMA AND RESTORING SIDEWALKS PER THE RIDOT STANDARD SPEC.
10. PAYMENT FOR NEW CONCRETE LIGHT STANDARD BASE AND REMOVE AND RELOCATE LIGHT STANDARD SHALL INCLUDE ANY AND ALL WORK REQUIRED TO RECONNECT THE EXISTING LIGHT CONDUIT AND LIGHT FIXTURE TO THE NEW FOUNDATION. EXISTING ANCHOR BOLT SIZE AND PATTERN SHALL BE FIELD VERIFIED AND INCLUDED IN THE SHOP DRAWING SUBMISSION. ALL WORK RELATED TO LIGHT STANDARD SHALL BE BY AN APPROVED NGRID SUBCONTRACTOR AS LISTED IN NATIONAL GRID ELECTRIC SUPPLEMENTAL INFORMATION FOLLOWING SPECIAL PROVISION CODE 702.9920 & 702.9921.
11. COST OF INSTALLING FIRE ALARM CONDUIT INTO TELEPHONE MANHOLE SHALL BE INCLUDED IN COST OF CONDUIT.
12. ALL SURVEY FIELD BOOKS AND ELECTRONIC DATA SHALL BE SUBMITTED TO RIDOT SURVEY SECTION UPON COMPLETION OF THE CONSTRUCTION WORK. FIELD BOOKS SHALL INCLUDE A LISTING OF ALL RI HIGHWAY BOUNDS THAT WERE SET WITH STATIONS, OFFSETS, COORDINATES AND DATE SET CERTIFIED BY CONTRACTOR'S PROFESSIONAL LAND SURVEYOR.
13. GUARDRAIL POST SPACING AND SIDEWALKS SHALL BE MODIFIED AS REQUIRED AT NO ADDITIONAL COST TO ACCOMMODATE RESETTING OF HIGHWAY BOUNDS.
14. UNKNOWN QUANTITY OF MEDIAN WILL BE REMOVED ON EACH APPROACH BY VERIZON'S SUBCONTRACTOR TO FACILITATE ADVANCE INSTALLATION OF THEIR DUCT BANKS. THE SLOPED FACE GRANITE CURB WILL BE STOCKPILED BEHIND THE FENCE GATE 90' NORTH OF THE EXISTING NORTHEAST ENDPPOST. COST FOR RETRIEVING THIS CURB AND RE-INSTALLING IT WILL BE PAID FOR UNDER ITEM 908.0700. ADDITIONALLY, VERIZON WILL PAVE THE REMOVED PORTION OF MEDIAN WITH 4" PAVEMENT FLUSH WITH THE ROAD SURFACE. COST OF REMOVING THIS PAVEMENT FOR RE-INSTALLING THE CURB AND MEDIAN WILL BE UNDER ITEM 201.0409.
15. COST FOR REMOVAL AND DISPOSAL OF RAILROAD TIE RETAINING WALL AT SOUTHWEST CORNER OF THE BRIDGE SHALL BE INCLUDED UNDER CLEARING AND GRUBBING.
16. REMOVAL AND DISPOSAL OF MISCELLANEOUS GATE BOXES IN SOUTHEAST SIDEWALK SHALL BE INCLUDED IN COST OF RESPECTIVE PIPE REMOVAL.
17. ALL TELEPHONE RELATED WORK, INCLUDING ON AND OFF THE BRIDGE, WILL BE BY VERIZON AND THEIR AUTHORIZED SUBCONTRACTOR, INCLUDING ALL MATERIALS AND LABOR. VERIZON PLANS INCLUDED AT END OF PLAN SET ARE FOR INFORMATION PURPOSES ONLY.
18. GAS LINE ON APPROACHES SHALL BE INSTALLED PRIOR TO STAGE 1 TRAFFIC CONTROL UTILIZING ONE LANE CLOSURES.



<p>LAMSON ENGINEERING CORPORATION Newton, Massachusetts</p>	<p><u>TITLE OF SKETCH</u> RECONSTRUCTION OF HARBOR JUNCTION BRIDGE NO. 131 JOB SPECIFIC PLAN, SYMBOLS, LEGEND & NOTES</p>	<p>R.I. CONTRACT NO. 2015-CB-045</p>
		<p>SKETCH NO. 1</p>
<p>DATE: 1/25/2016</p>	<p>ADDENDUM NUMBER 2</p>	<p>SHEET NO. 5</p>

SUGGESTED STAGE CONSTRUCTION NOTES

PRE-STAGE 1

1. VERIZON TO SET UP THEIR OWN TRAFFIC CONTROL AND INSTALL MANHOLES ON EACH END OF PROJECT AND ALSO INSTALL DUCT ON APPROACHES FROM NEW MANHOLES TO JUST SHORT OF BRIDGE. SOUTH APPROACH MAIN DUCT TO STOP SHORT OF WATER SERVICE TO ZOO. SOUTH APPROACH ZOO SERVICE DUCT TO BE INSTALLED (TIED IN USING ALTERNATING TRAFFIC ON EAST SIDE OF BRIDGE). REMOVAL OF PORTIONS OF THE MEDIAN WILL BE REQUIRED BY VERIZON'S SUB CONTRACTOR TO FACILITATE DUCT INSTALLATION. VERIZON TO REMOVE TRAFFIC CONTROL UPON COMPLETION OF THIS WORK.
2. INSTALL GAS LINE ON APPROACHES UTILIZING ONE LANE CLOSURES.



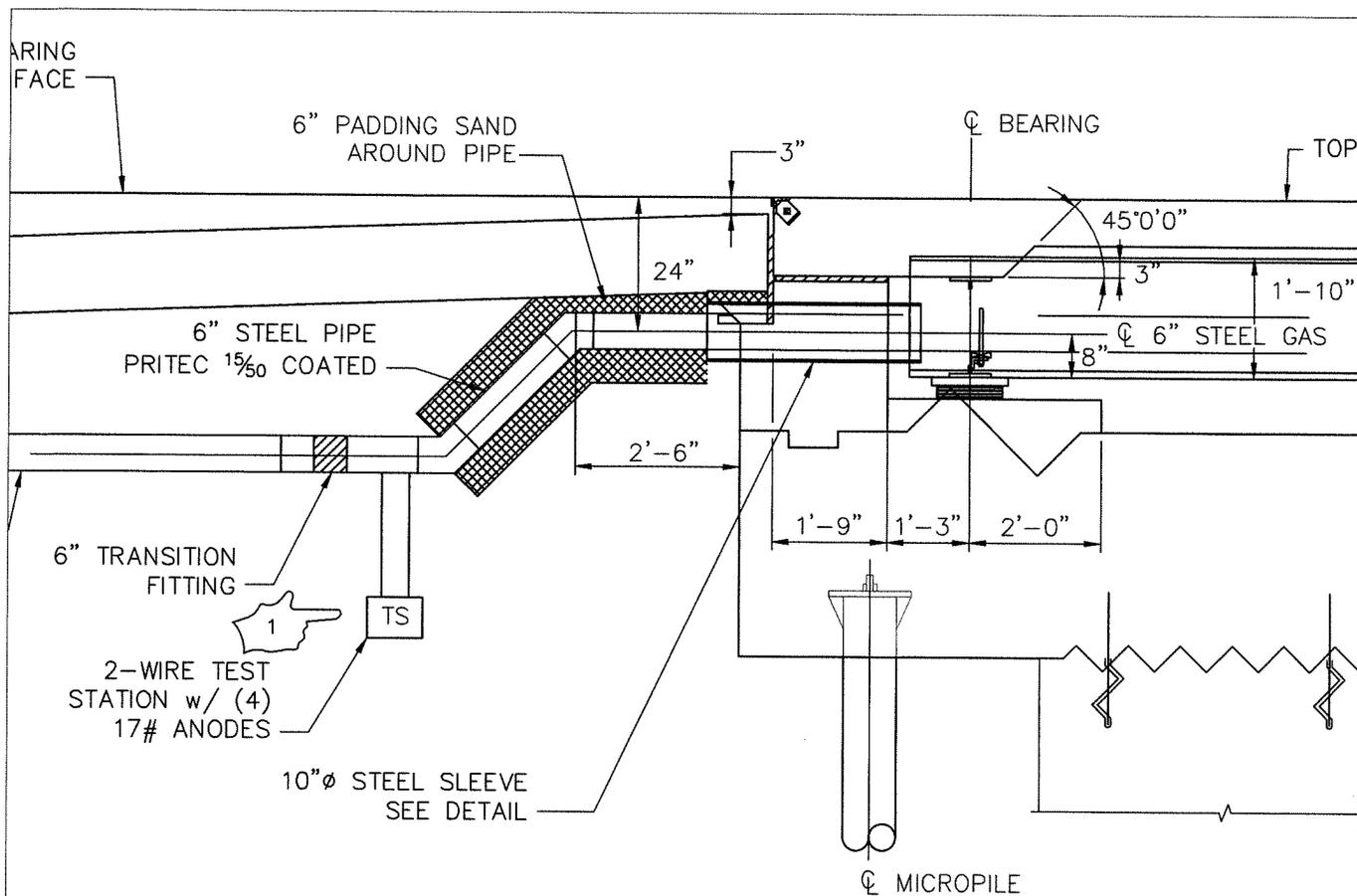
STAGE 1

1. SET UP STAGE 1 TRAFFIC CONTROL.
2. INSTALL TEMPORARY UTILITY BRIDGE AND TEMPORARY WATER, INCLUDING SERVICE TO ZOO AND PUT INTO SERVICE. SHUT OFF AND DRAIN WATER FROM THE LINE ON BRIDGE.
3. DEMOLISH WEST HALF OF BRIDGE AND CONSTRUCT NEW WEST HALF OF BRIDGE. THIS NEW WEST HALF WILL INCLUDE INSTALLATION OF SIGNAL CONDUIT (INSTALLED HALFWAY THROUGH MEDIAN), TELEPHONE DUCTS (TIED IN TO APPROACH DUCT ASAP PRIOR TO CASTING DECK TO EXPEDITE COMPLETION OF CABLE PULLING AND SPlicing TO ALLOW FOR PHASE 2 WORK), GAS LINE (INSTALLED HALFWAY THROUGH MEDIAN), WATER LINE (TIED IN AND PUT INTO SERVICE TO ALLOW FOR REMOVAL OF TEMPORARY LINE AND UTILITY BRIDGE), AND ELECTRIC DUCTS (TIED IN TO MANHOLES ON APPROACH).
4. REMOVE TEMPORARY UTILITY BRIDGE AND TEMPORARY WATER LINE.

STAGE 2

5. SET UP STAGE 2 TRAFFIC CONTROL AND MOVE TRAFFIC TO NEW WEST HALF OF BRIDGE. INSTALL TEMPORARY SHIELDING FOR STAGE 2 CONSTRUCTION.
6. TIE IN GAS AND SIGNAL AND FIRE ALARM WITH MINIMAL INTERRUPTION OF SERVICE.
7. DEMOLISH EAST HALF OF BRIDGE MAKING SURE VERIZON, COX, AND FIRE ALARM LINE PULLING AND SPlicing IS COMPLETE PRIOR TO REMOVING EXISTING TELEPHONE DUCTS.
8. CONSTRUCT NEW EAST HALF OF BRIDGE.
9. CONSTRUCT MEDIAN ON BRIDGE AND APPROACHES.
10. INSTALL STRIPING AND OPEN BRIDGE.

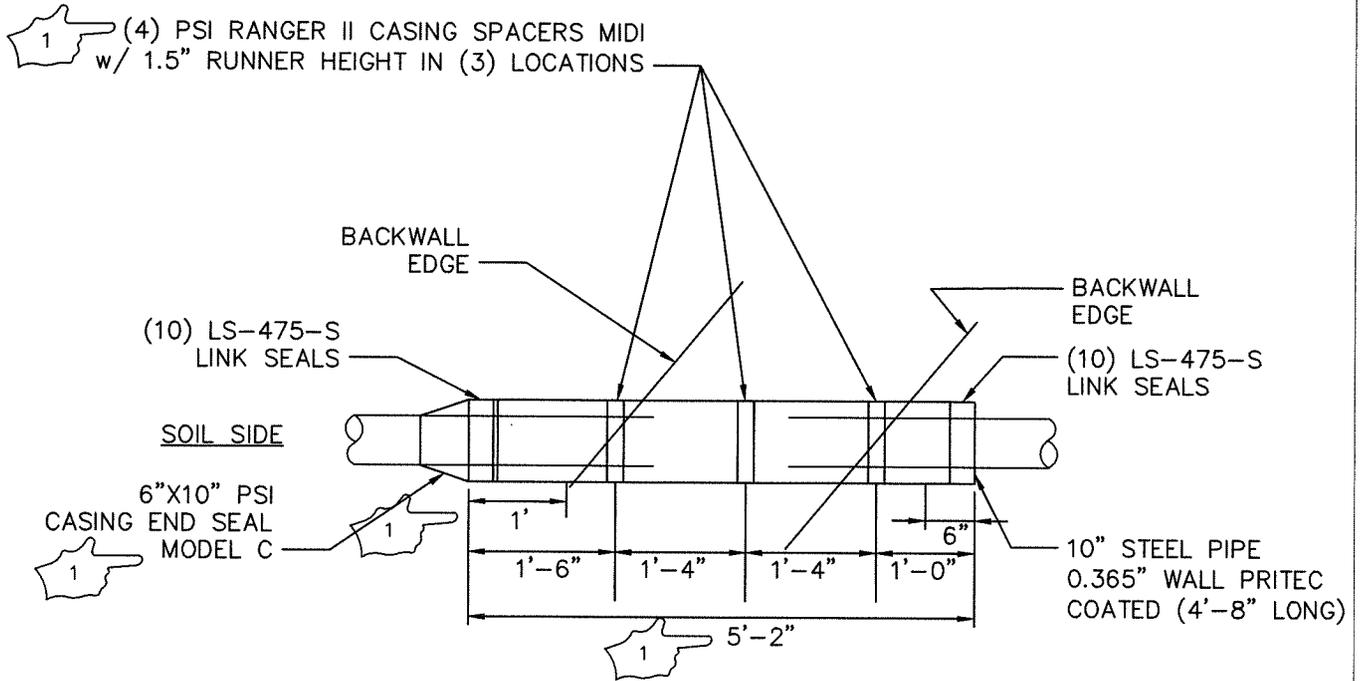
LAMSON ENGINEERING CORPORATION Newton, Massachusetts	<u>TITLE OF SKETCH</u> RECONSTRUCTION OF HARBOR JUNCTION BRIDGE NO. 131 PHASE CONSTRUCTION PLAN AND DETAIL	R.I. CONTRACT NO. 2015-CB-045
		SKETCH NO. 2
DATE: 1/25/2016	ADDENDUM NUMBER 2	SHEET NO. 13



GAS LINE AT ABUTMENT

SCALE: 1/2" = 1'-0"

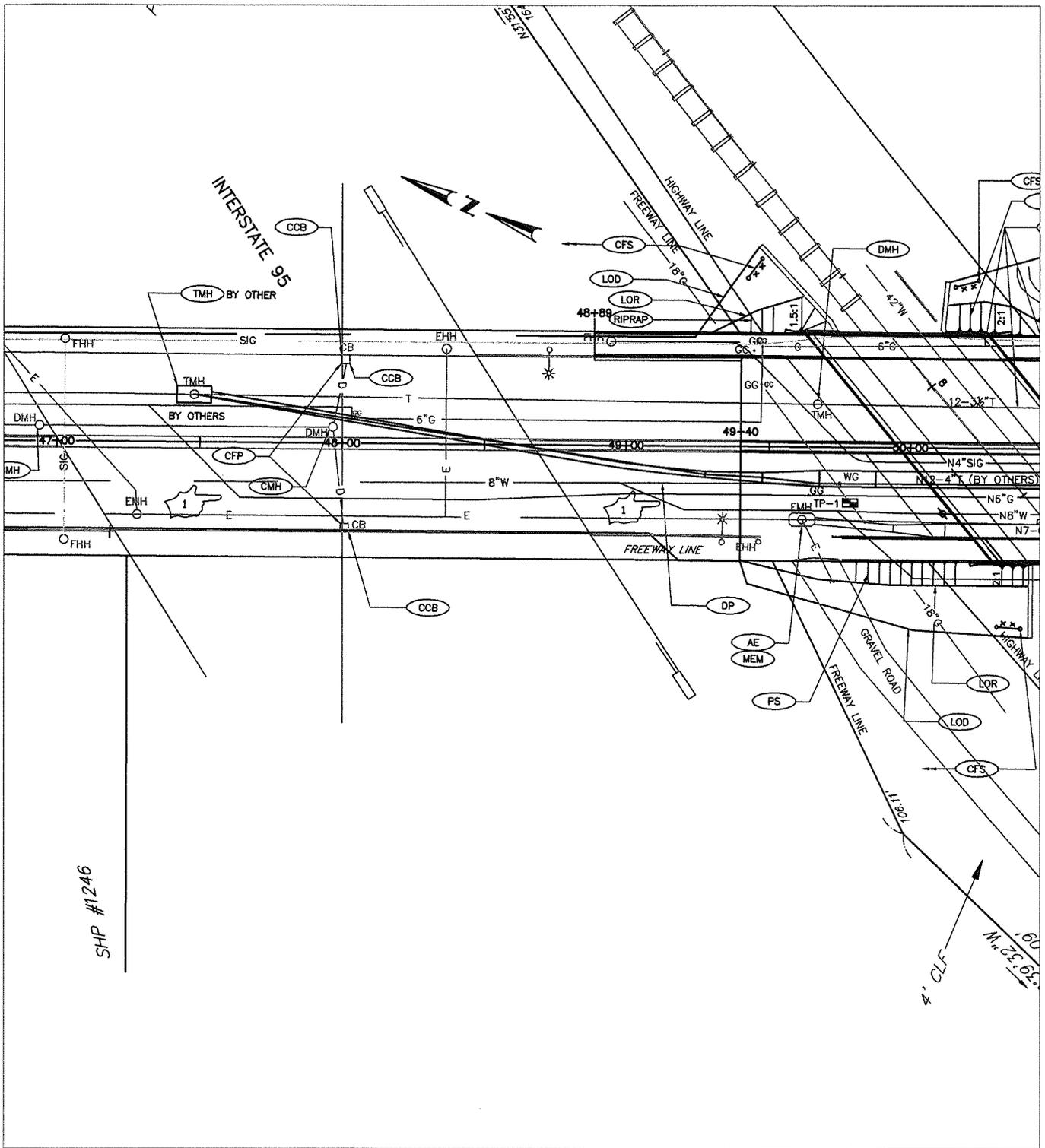
<p>LAMSON ENGINEERING CORPORATION Newton, Massachusetts</p>	<p>TITLE OF SKETCH RECONSTRUCTION OF HARBOR JUNCTION BRIDGE NO. 131 ABUTMENT DETAILS-2</p>	<p>R.I. CONTRACT NO. 2015-CB-045</p>
		<p>SKETCH NO. 3</p>
<p>DATE: 1/25/2016</p>	<p>ADDENDUM NUMBER 2</p>	<p>SHEET NO. 19</p>



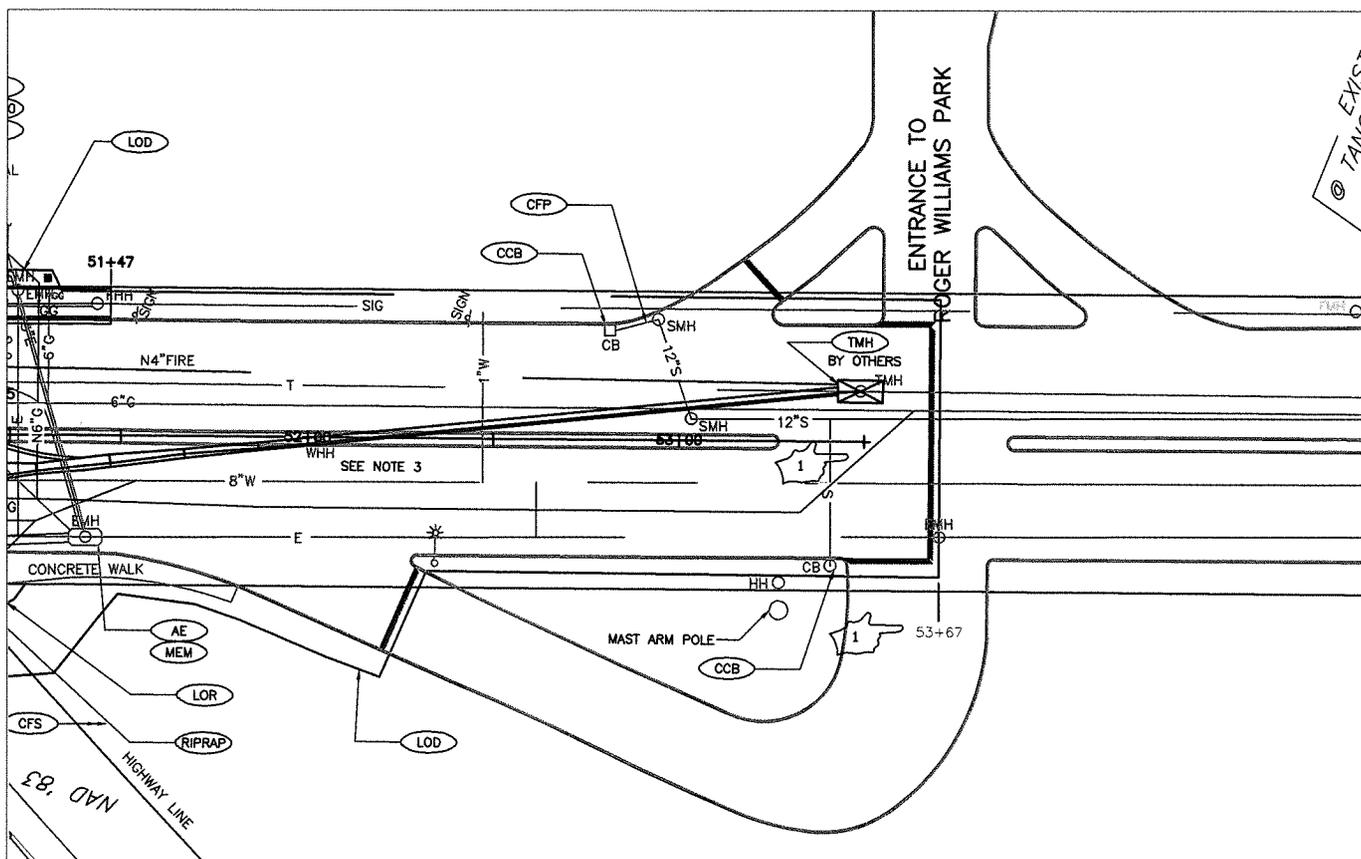
GAS SLEEVE DETAIL

SCALE: 3/4" = 1'-0"

<p>LAMSON ENGINEERING CORPORATION Newton, Massachusetts</p>	<p>TITLE OF SKETCH</p> <p>RECONSTRUCTION OF HARBOR JUNCTION BRIDGE NO. 131 ABUTMENT DETAILS-2</p>	<p>R.I. CONTRACT NO. 2015-CB-045</p>
		<p>SKETCH NO. 4</p>
<p>DATE: 1/25/2016</p>	<p>ADDENDUM NUMBER 2</p>	<p>SHEET NO. 19</p>



<p>LAMSON ENGINEERING CORPORATION Newton, Massachusetts</p>	<p>TITLE OF SKETCH RECONSTRUCTION OF HARBOR JUNCTION BRIDGE NO. 131 DRAINAGE AND UTILITY PLAN</p>	<p>R.I. CONTRACT NO. 2015-CB-045</p>
		<p>SKETCH NO. 6</p>
<p>DATE: 1/25/2016</p>	<p>ADDENDUM NUMBER 2</p>	<p>SHEET NO. 37</p>

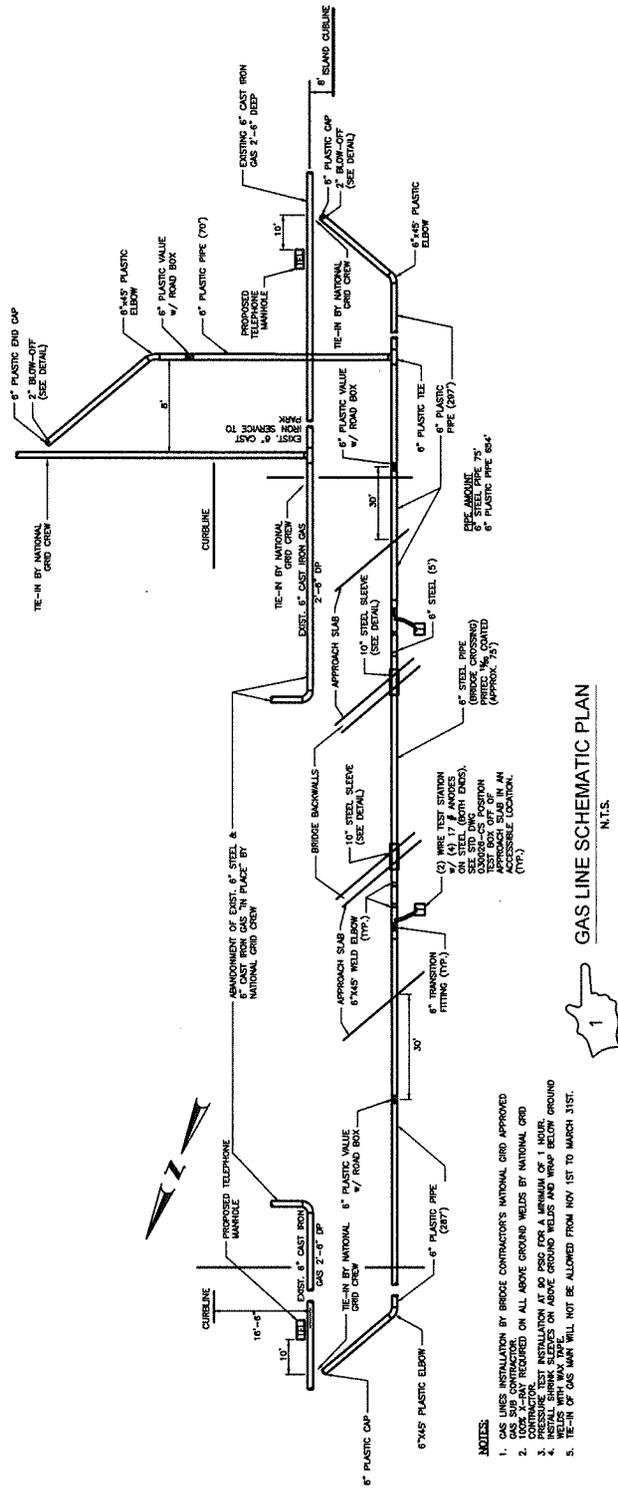


NOTES:

1. FOR ELECTRIC LINE, GAS LINE, SIGNAL LINE, TELEPHONE LINE & WATER LINE DETAILS AT ABUTMENT AND BRIDGE, SEE SHEET 18, 19, 20, 25 & 26.
2. ALL UTILITY COST SHALL INCLUDE PAVEMENT REPLACING.
3. REMOVE AND DISPOSE HANDHOLE AND RISER FOR WATER IN MEDIAN AT STATION 52+00. TURN OFF CORPORATION STOP AT MAIN AND CUT AND CRIMP SERVICE. THIS WORK SHALL NOT BE PAID FOR SEPARATELY BUT CONSIDERED INCIDENTAL TO WATER RELATED WORK.
4. SEE SHEET 45 FOR TRAFFIC CAMERA MODIFICATIONS.
5. CONTRACTOR SHALL VACUUM EXCAVATE TEST PIT ON NORTH SIDE OF BRIDGE TO LOCATE CRITICAL 18" GAS MAIN PRIOR TO COMMENCING BRIDGE CONSTRUCTION. ACTUAL LOCATION OF TEST PIT SHALL BE DETERMINED BY CONTRACTOR WITH THE APPROVAL OF THE ENGINEER TO AVOID EXISTING UTILITIES. TEST PIT EXCAVATION AND BACKFILL, AND ALL OTHER WORK IN THE VICINITY OF THIS GAS MAIN, SHALL BE COORDINATED WITH AND DONE IN THE PRESENCE OF NATIONAL GRID GAS.
6. SEE SHEET 40 AND 41 FOR FIBER OPTIC SIGNAL RELATED WORK.



LAMSON ENGINEERING CORPORATION Newton, Massachusetts	TITLE OF SKETCH RECONSTRUCTION OF HARBOR JUNCTION BRIDGE NO. 131 DRAINAGE AND UTILITY PLAN	R.I. CONTRACT NO. 2015-CB-045
		SKETCH NO. 7
DATE: 1/25/2016	ADDENDUM NUMBER 2	SHEET NO. 37



- NOTES:**
1. GAS LINES INSTALLATION BY BRIDGE CONTRACTOR'S NATIONAL GRID APPROVED CONTRACTOR.
 2. 100% X-RAY REQUIRED ON ALL ABOVE GROUND WELDS BY NATIONAL GRID CONTRACTOR.
 3. INSTALL SHRINK SLEEVES ON ABOVE GROUND WELDS AND WMPF BELOW GROUND.
 4. WELDS TO BE TESTED BY NATIONAL GRID APPROVED CONTRACTOR.
 5. THE AIR OF GAS MAIN WILL NOT BE ALLOWED FROM NOV 1ST TO MARCH 31ST.

GAS LINE SCHEMATIC PLAN
N.T.S.

LAMSON ENGINEERING CORPORATION
Newton, Massachusetts

TITLE OF SKETCH
RECONSTRUCTION OF HARBOR JUNCTION BRIDGE NO. 131
MISCELLANEOUS HIGHWAY DETAILS 3

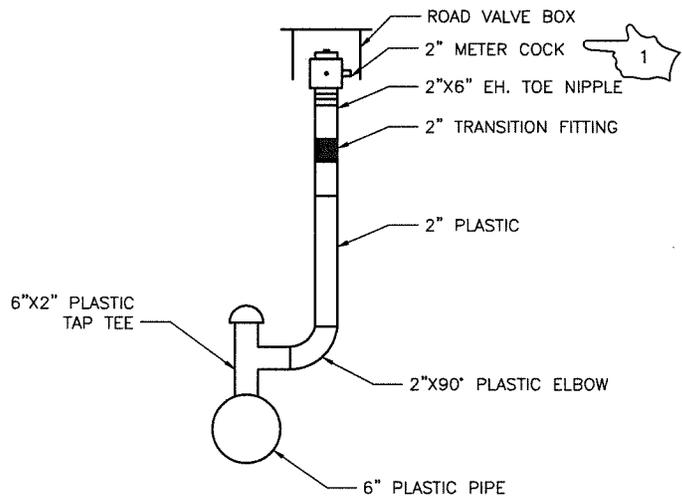
R.I. CONTRACT NO. 2015-CB-045

SKETCH NO. 8

DATE: 1/25/2016

ADDENDUM NUMBER 2

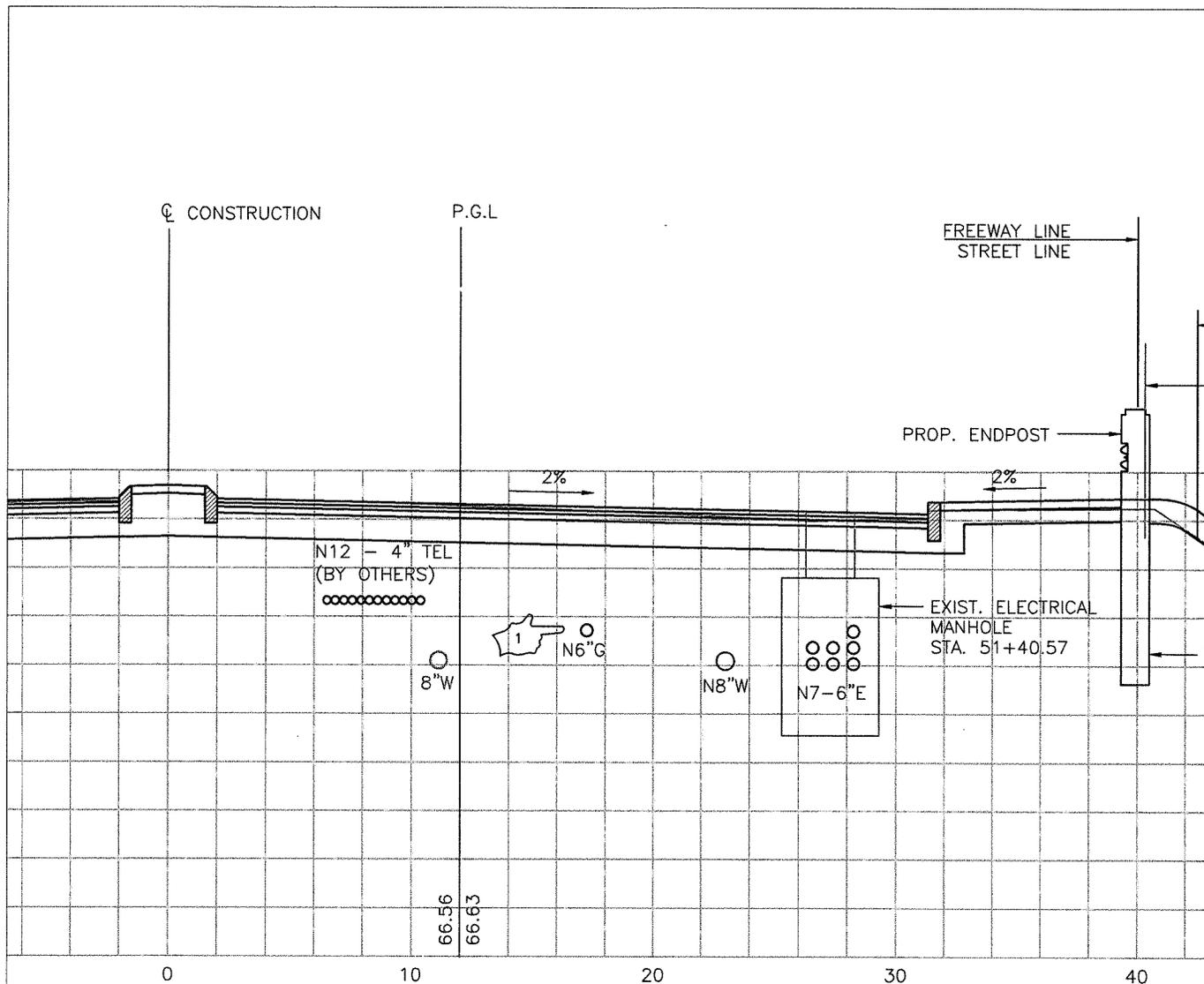
SHEET NO. 44



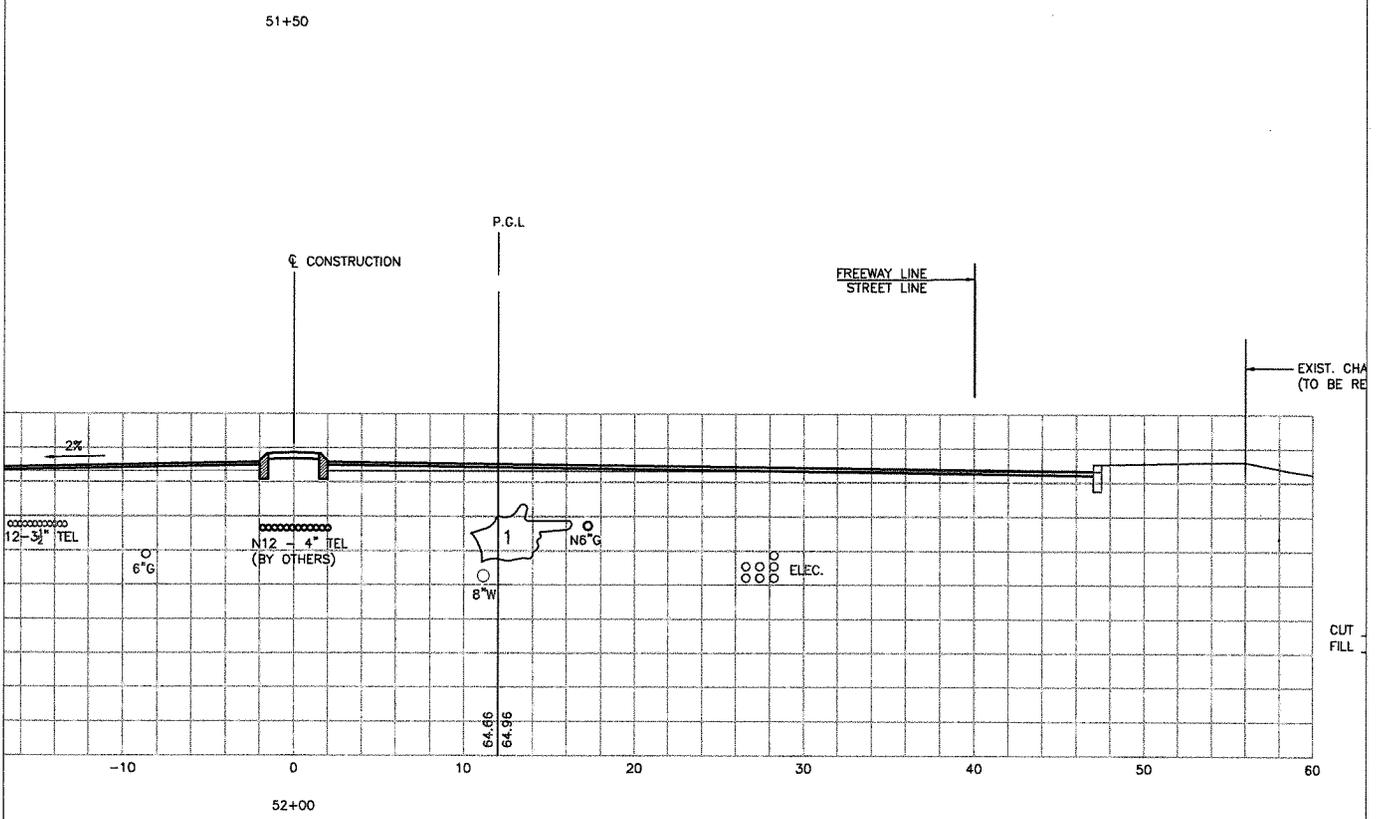
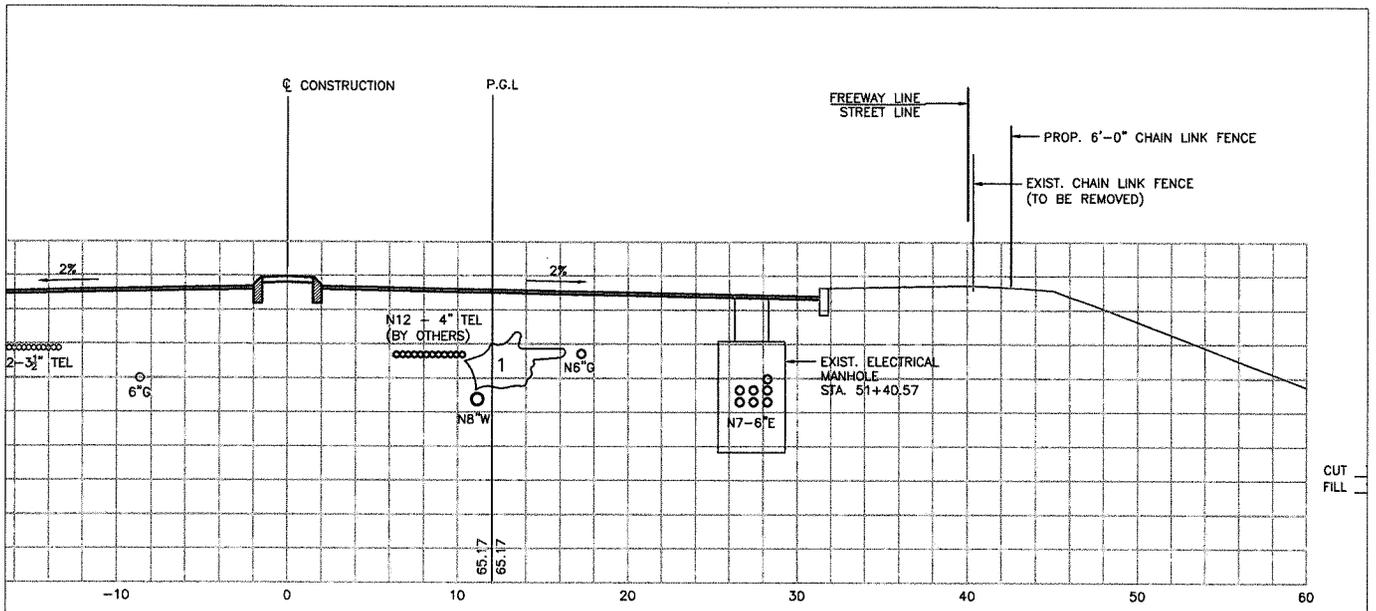
BLOW-OFF DETAIL

N.T.S.

LAMSON ENGINEERING CORPORATION Newton, Massachusetts	<u>TITLE OF SKETCH</u> RECONSTRUCTION OF HARBOR JUNCTION BRIDGE NO. 131 MISCELLANEOUS HIGHWAY DETAILS 3	R.I. CONTRACT NO. 2015-CB-045
		SKETCH NO. 9
DATE: 1/25/2016	ADDENDUM NUMBER 2	SHEET NO. 44



<p>LAMSON ENGINEERING CORPORATION Newton, Massachusetts</p>	<p>TITLE OF SKETCH</p> <p>RECONSTRUCTION OF HARBOR JUNCTION BRIDGE NO. 131 CROSS SECTIONS 4</p>	<p>R.I. CONTRACT NO. 2015-CB-045</p>
		<p>SKETCH NO. 10</p>
<p>DATE: 1/25/2016</p>	<p>ADDENDUM NUMBER 2</p>	<p>SHEET NO. 53</p>



LAMSON ENGINEERING CORPORATION
Newton, Massachusetts

TITLE OF SKETCH
RECONSTRUCTION OF HARBOR JUNCTION BRIDGE NO. 131
CROSS SECTIONS 5

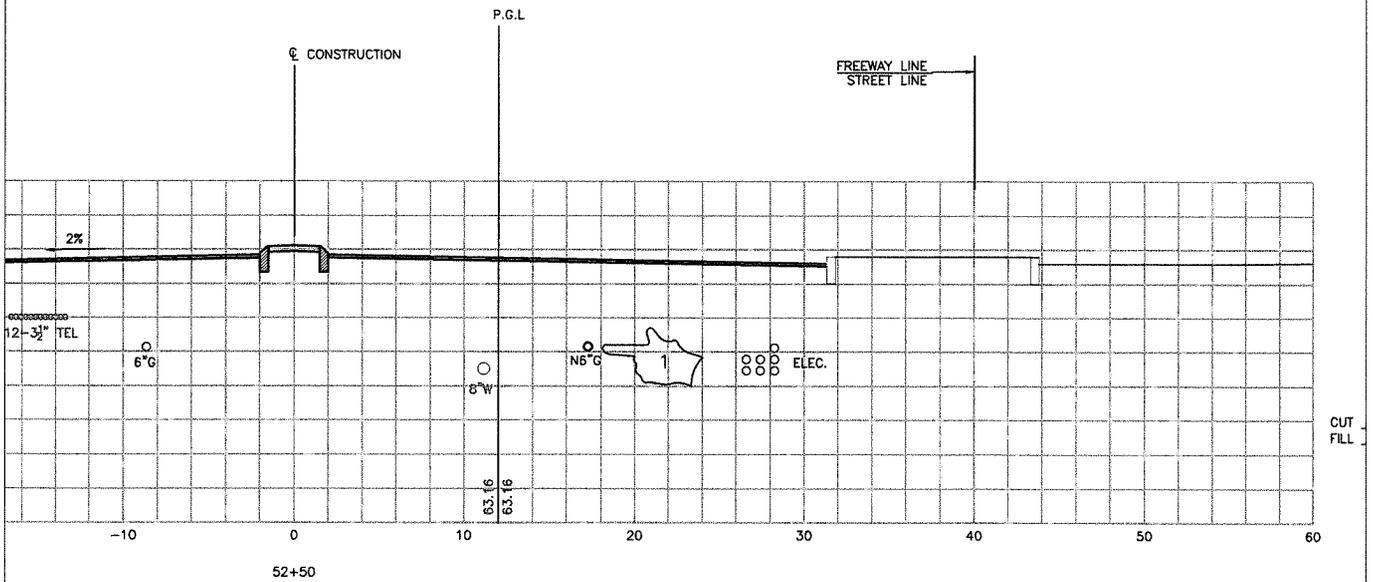
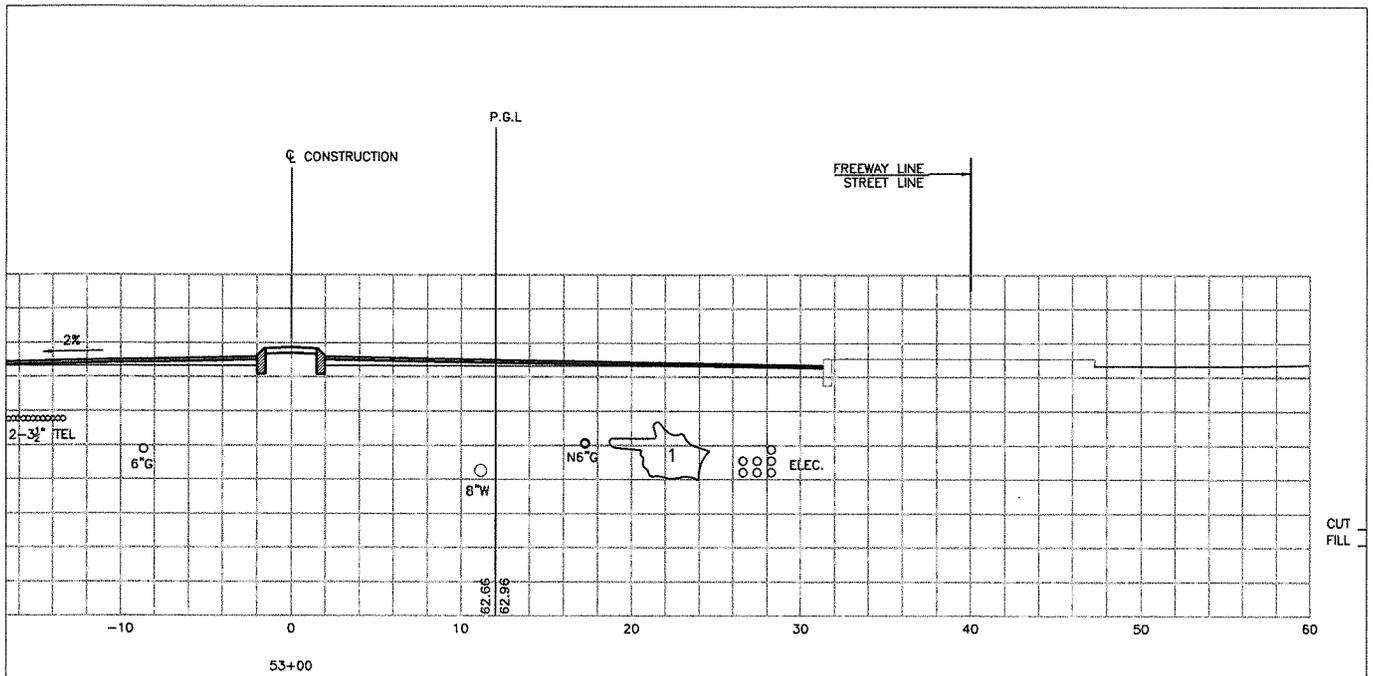
R.I. CONTRACT NO. 2015-CB-045

SKETCH NO. 11

DATE: 1/25/2016

ADDENDUM NUMBER 2

SHEET NO. 54



<p>LAMSON ENGINEERING CORPORATION Newton, Massachusetts</p>	<p>TITLE OF SKETCH RECONSTRUCTION OF HARBOR JUNCTION BRIDGE NO. 131 CROSS SECTIONS 6</p>	<p>R.I. CONTRACT NO. 2015-CB-045</p>
		<p>SKETCH NO. 12</p>
<p>DATE: 1/25/2016</p>	<p>ADDENDUM NUMBER 2</p>	<p>SHEET NO. 55</p>

Proposal Items

Project Name - Harbor Junction Br. #131

Estimate Name - Addendum 2

R.I. Contract No. - 2015-CB-045

FAP Nos - BRO-0131-001

 Note: The UNIT PRICE for each Item must be written in words and figures.

No.	Item Code	Quantity	Description	Unit	Unit Bid Price \$0.00	Amount (PxQ) \$0.00
022	401.2000	576.00	CLASS 12.5 HMA			
	AT			TON		
023	401.4000	137.00	CLASS 4.75 HMA			
	AT			TON		
024	403.0300	5,200.00	ASPHALT EMULSION TACK COAT			
	AT			SY		
025	501.9901	1,850.00	INTEGRALLY COLORED AND STAMPED PORTLAND CEMENT CONCRETE -COBBLESTONE PATTERN, 4-INCH DEPTH			
	AT			SF		
026	603.1000	35.00	CONTROLLED LOW STRENGTH MATERIAL			
	AT			CY		
027	701.5206	28.00	6 INCH DUCTILE IRON WATER PIPE CLASS 52, RESTRAINED JOINT			
	AT			LF		
028	701.5208	500.00	8 INCH DUCTILE IRON WATER PIPE CLASS 52, RESTRAINED JOINT			
	AT			LF		

Proposal Items

Project Name - Harbor Junction Br. #131

Estimate Name - Addendum 2

R.I. Contract No. - 2015-CB-045

FAP Nos - BRO-0131-001

 Note: The UNIT PRICE for each Item must be written in words and figures.

No.	Item Code	Quantity	Description	Unit	Unit Bid Price \$0.00	Amount (PxQ) \$0.00
036	702.9910	666.00	INSTALL 6" POLYETHYLENE GAS MAIN AND FITTINGS ON APPROACHES			
		AT		LF		
037	702.9912	80.00	INSTALL 6" STEEL GAS MAIN AND FITTINGS ON BRIDGE			
		AT		LF		
038	702.9920	96.00	6" PVC ELECTRIC DUCTS IN APPROACHES			
		AT		LF		
039	702.9921	75.00	6" FIBERGLASS ELECTRIC DUCTS ON BRIDGE			
		AT		LF		
040	707.0955	2.00	ADJUST ELECTRICAL MANHOLE TO GRADE			
		AT		EACH		
041	708.9040	170.00	CLEANING AND FLUSHING PIPE ALL SIZES			
		AT		LF		
042	708.9041	4.00	CLEANING CATCH BASINS ALL TYPES AND SIZES			
		AT		EACH		

Proposal Items

Project Name - Harbor Junction Br. #131

Estimate Name - Addendum 2

R.I. Contract No. - 2015-CB-045

FAP Nos - BRO-0131-001

 Note: The UNIT PRICE for each Item must be written in words and figures.

No.	Item Code	Quantity	Description	Unit	Unit Bid Price \$0.00	Amount (PxQ) \$0.00
085	928.0800	20.00	TRUCK MOUNTED ATTENUATOR WITH TRUCK MOUNTED FLASHING ARROW BOARD			
	AT			PDAY		
086	929.0110	30.00	FIELD OFFICE			
	AT			PMO		
087	931.0110	120.00	CLEANING AND SWEEPING PAVEMENT			
	AT			HSY		
088	932.0100	195.00	CUTTING AND MATCHING ASPHALT			
	AT			LF		
089	932.0210	1,415.00	FULL DEPTH SAWCUT OF BITUMINOUS PAVEMENT AND RIGID BASE			
	AT			LF		
090	932.0230	33.00	FULL DEPTH SAWCUT OF PORTLAND CEMENT CONCRETE SIDEWALK/DRIVEWAY			
	AT			LF		
091	935.0400	3,825.00	REMOVING BITUMINOUS PAVEMENT BY MICRO MILLING			
	AT			SY		

NON-MANDATORY PRE-BID CONFERENCE SIGN IN FORM

Bid Title:	Harbor Junction Bridge
Bid Number:	7550162
Date:	1/19/2016
Purchasing Rep.:	

Company Name	Name	Contact E Mail	Phone
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- | | | | | |
|----|--------------------------|----------------|--------------------------------|----------------|
| 1 | RIDOT | GARY GARZONE | gary.garzone@dot.nj.gov | 222-3260 |
| 2 | " | ANDY TAMMARIAN | andy.tammarian@dot.nj.gov | 222-2052 x4083 |
| 3 | " | JUSTIN MCGAY | justin.mcgay@dot.nj.gov | 222-2053 x4374 |
| 4 | " | STEPHEN BIRD | stephen.bird@dot.nj.gov | 265-4227 |
| 5 | D'AMBRA | ROBERT LADSTON | rladston@dambr.com | 737-1300 |
| 6 | JOHN ROCCIO CORP. | JOHN ROCCIO | John.Roccio@JohnRoccioCorp.com | 639-2648 |
| 7 | JOHN WATKINS | GRA INC. | jwayland@graengs.com | 726-4084 |
| 8 | LAMSON ENGINEERING | KIM C. LAM | LAMSONENG@MSN.COM | 617-558-0101 |
| 9 | JF WHITE | Andrea Caprio | acaprio@jwhite.com | 617-474-1819 |
| 10 | JF White | PAUL GRIMMELI | PGrimmi@JFwhite.com | 774-307-0761 |
| 11 | JF White PWSB | Ken Lanoie | KLANOIE@PROVWATER.COM | 401-521-0300 |
| 12 | GDM SMITH-PWSB | SEAN GRIFFIN | GRIFFIN@GDMSMITH.COM | 860-538-0374 |
| 13 | Steve Drayer | IZE DOT | Steven.Drayer@ize.dot.nj.gov | 401.639.0216 |
| 14 | | | | |
| 15 | | | | |
| 16 | | | | |